JANUARY • 1950

textile bulletin

Sectional INDEX

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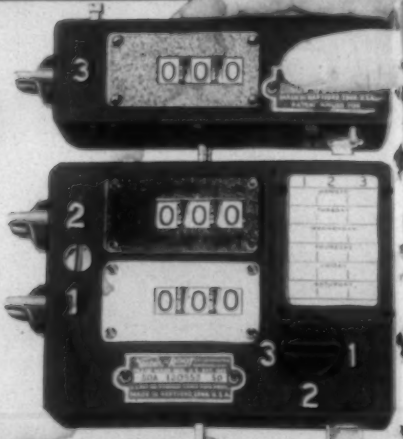
Open Up New Savings with Modern Veeder-Root Reset 2-3 Pick Counters

Yes, every time you open up a box that holds a brand-new Veeder-Root 2-3 Convertible Pick Counter, you open up these new savings:

TIME IS SAVED (not to mention wear and tear on the hands) by Veeder-Root's streamlined plastic reset knobs that fit the fingers *and don't have to be pulled out.* So weavers can reset *New* 2-3 Pick Counters in double-quick time . . . without knocking themselves out!

MONEY IS SAVED because Veeder-Root's *Locked Wheels* resist mechanical overthrowing . . . and because they're constructed for strength plus low weight, to reduce wear from vibration.



Order *New* Veeder-Root 2-3 Pick Counters *now* . . . for the sooner they're installed, the sooner they'll pay for themselves. Get in touch with the nearest office.

VEEDER-ROOT INCORPORATED

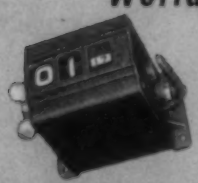
World's Largest Manufacturers of Counting & Computing Devices

HARTFORD 2, CONNECTICUT • GREENVILLE, SO. CAROLINA

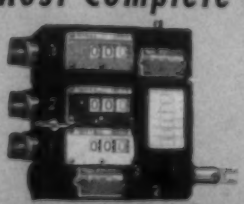
In Canada: Veeder-Root of Canada, Ltd., 955 St. James Street, Montreal 3.
In Great Britain: Veeder-Root Ltd., Kilspindie Road, Dundee, Scotland.

"Counting House of the Textile Industry"

World's Most Complete Line of Textile Counters . . .



New "Dozens" Counter for Glove and Hosiery Mills



2-3 Convertible Hank Counter

Loom Cut Meter

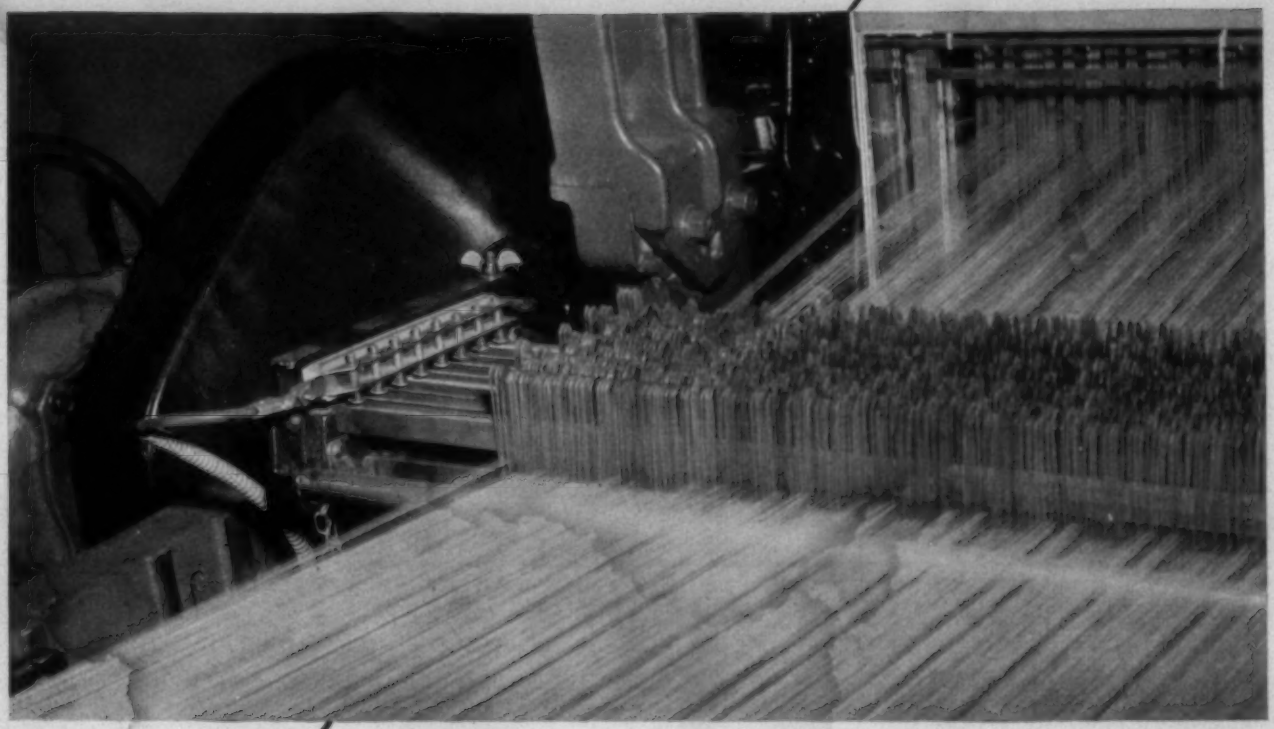
2-3 Revolution Counter for Knitting Machines

Above: Adding 3rd Counting Unit to 2-3 Convertible Pick Counter

. . . all these and scores of other types . . . Send for Catalog T-48

FOR DEPENDABILITY

DRAPER K-A ELECTRICAL WARP STOP MOTION



WITH

DRAPER STAINLESS STEEL ELECTRODE BLADES

AND

DRAPER STAINLESS STEEL DROP WIRES

MAKE

A FINE TEAM!

The Draper-K.A. Electrical Warp Stop Motion can be applied to any type loom weaving any kind of fabric.

Send for the new Draper-K.A. catalog just off the press for further information on stop motions, drop wires, and electrodes.

DRAPER CORPORATION

K.A. ELECTRICAL WARP STOP DIVISION • PAWTUCKET, RHODE ISLAND

Announcing—

two new Thorobred "running mates"—

the amazing new

DAYTON THOROBRED PICKERS

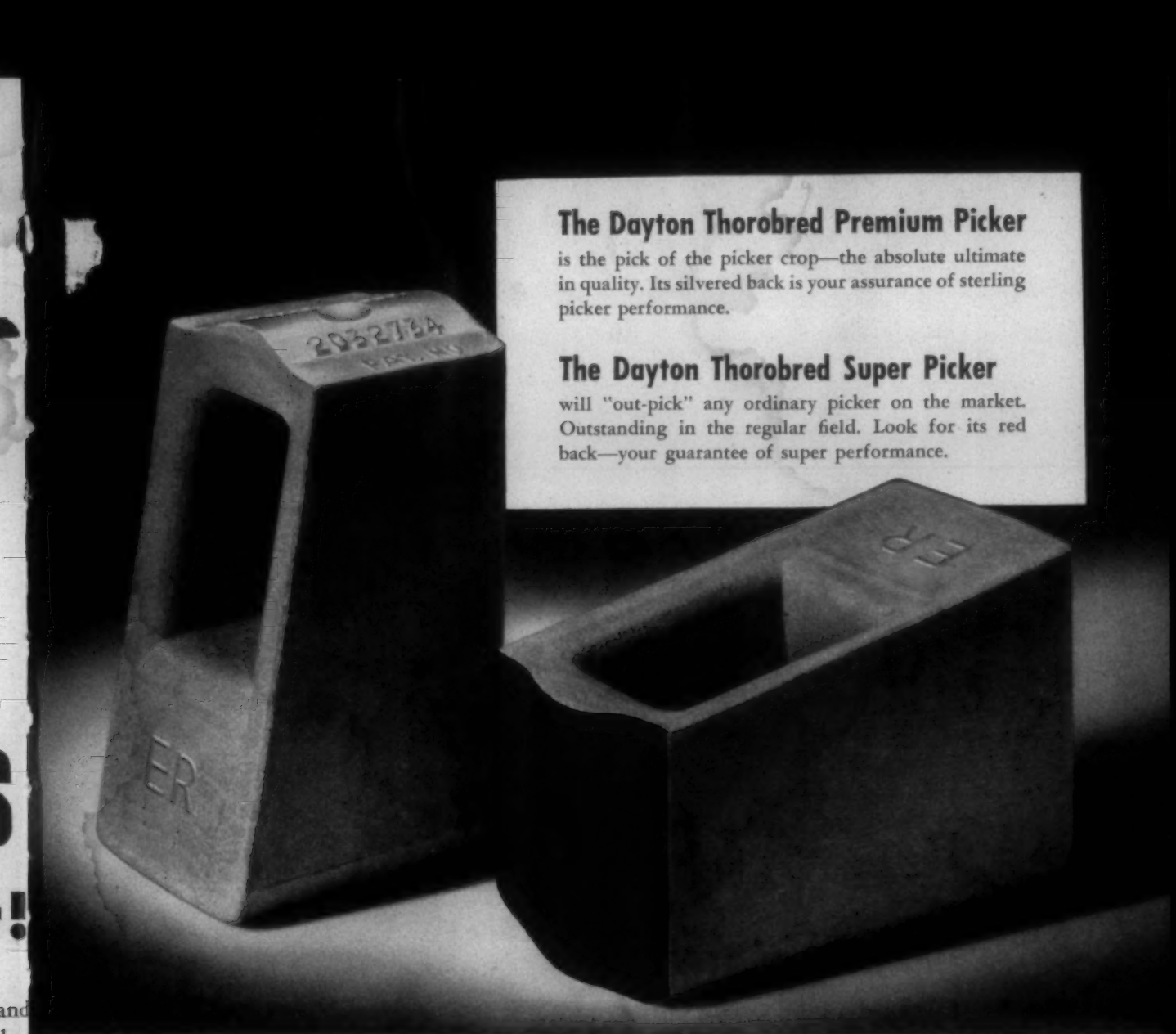
that last up to 200% longer!

Now, as the result of 12 years of product improvement and development, Dayton introduces the greatest advance in picker performance since rubber pickers were introduced to the textile field by Dayton.

These two new Dayton Pickers—the "Premium" and the "Super"—combine more durable fabrics and compounds, with these improved design features: rounded front edges that eliminate hanging filling; narrow back that permits free non-wear on lay-in strap; flared bottom that makes picker stick easier to apply.

Intensive testing in laboratory and mill preceded announcement of these new pickers. Tested against all other makes of pickers, they consistently outlasted them, often as much as two times! Cut down-time in the picking operation by the same amount, increased cloth production. Shuttles lasted longer, too, because these pickers run cooler. For high-speed looms as well as older types.

Turning out millions of new fashions in fig-leaves is a big, year-round job for the mills of America. Dayco and Thorobred textile machinery products help turn them out economically for the consumer, profitably for the mill-man.



The Dayton Thorobred Premium Picker

is the pick of the picker crop—the absolute ultimate in quality. Its silvered back is your assurance of sterling picker performance.

The Dayton Thorobred Super Picker

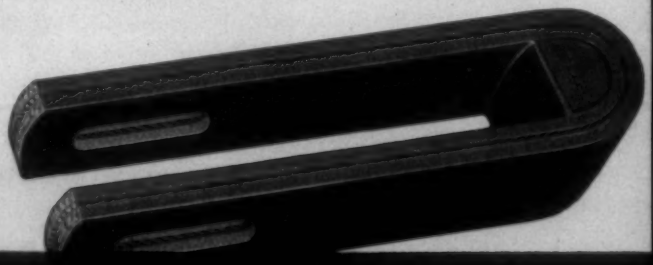
will "out-pick" any ordinary picker on the market. Outstanding in the regular field. Look for its red back—your guarantee of super performance.

Dayton Drop-Box Pickers are "three-ways" better

Improved at the three vital points of picker operation: Extra-hard at the spindle hole; firm but with "give" around the picker stick hole; soft for shock-absorption at the shuttle contact area. Available in reversible and non-reversible types.

The Dayton Thorobred Lug Strap

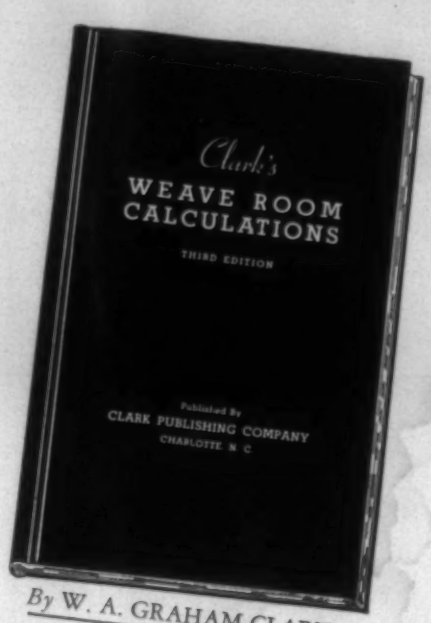
can take millions of flexings, millions of picker stick blows without "fatigue," without stretching. The built-in cushion protects cam points and picker sticks. Temperature and humidity changes won't affect them. (Did you see the recent tests of this Lug Strap against three common types of strap? The Thorobred outlasted every one!)



If you would like to see the last word in modern high-speed pickers, ask your Dayton Distributor or salesman, or write: *The Dayton Rubber Co., Textile Division, Woodside Building, Greenville, S. C.*

Dayton Rubber

Do You Want Facts About A Certain Cloth?



By W. A. GRAHAM CLARK

You (mill officials, selling house executives, students, professors) asked for it—in fact, you *begged* for it!

Now, after three years of work by the author and publisher, the third edition of *Clark's Weave Room Calculations* is available.

Since exhaustion of the second edition there have been many requests for this book from men actively engaged in the manufacture and sale of cotton goods, and a large number of increasingly urgent requests from textile school students and professors. The latter are interested primarily in the first part of the book—that dealing with cotton cloth calculations. In the revision of the first part (96 pages) some additional rules have been included, making a total of 74, along with further pertinent information—particularly as to loom speeds and the number of looms per weaver.

The second part of this new edition shows full particulars (width, weight, ends and picks, and warp and filling yarn numbers) for several thousand cotton cloths, grouped in tables appropriate to various sectors of the weaving industry. In the revision there have been added more than 700 fabrics, many of which attained importance during World War II. For some 1,900 plainwoven fabrics there have been added data as to the BYT (effective yards of yarn per pound of cloth) which also serves as the basis of the classification into groups.

The author, W. A. Graham Clark, retired recently after many years as chief of the textile division of the United States Tariff Commission. His practical and *absolutely accurate* treatise of cotton yarn and cloth calculations is finding wide application in the textile industry.

Price
$5

244 pages

Cloth bound

Book Dept., Clark Publishing Co., Charlotte 1, N. C.

Please send_____copy(ies) of CLARK'S WEAVE ROOM CALCULATIONS (third edition) at $5 each.

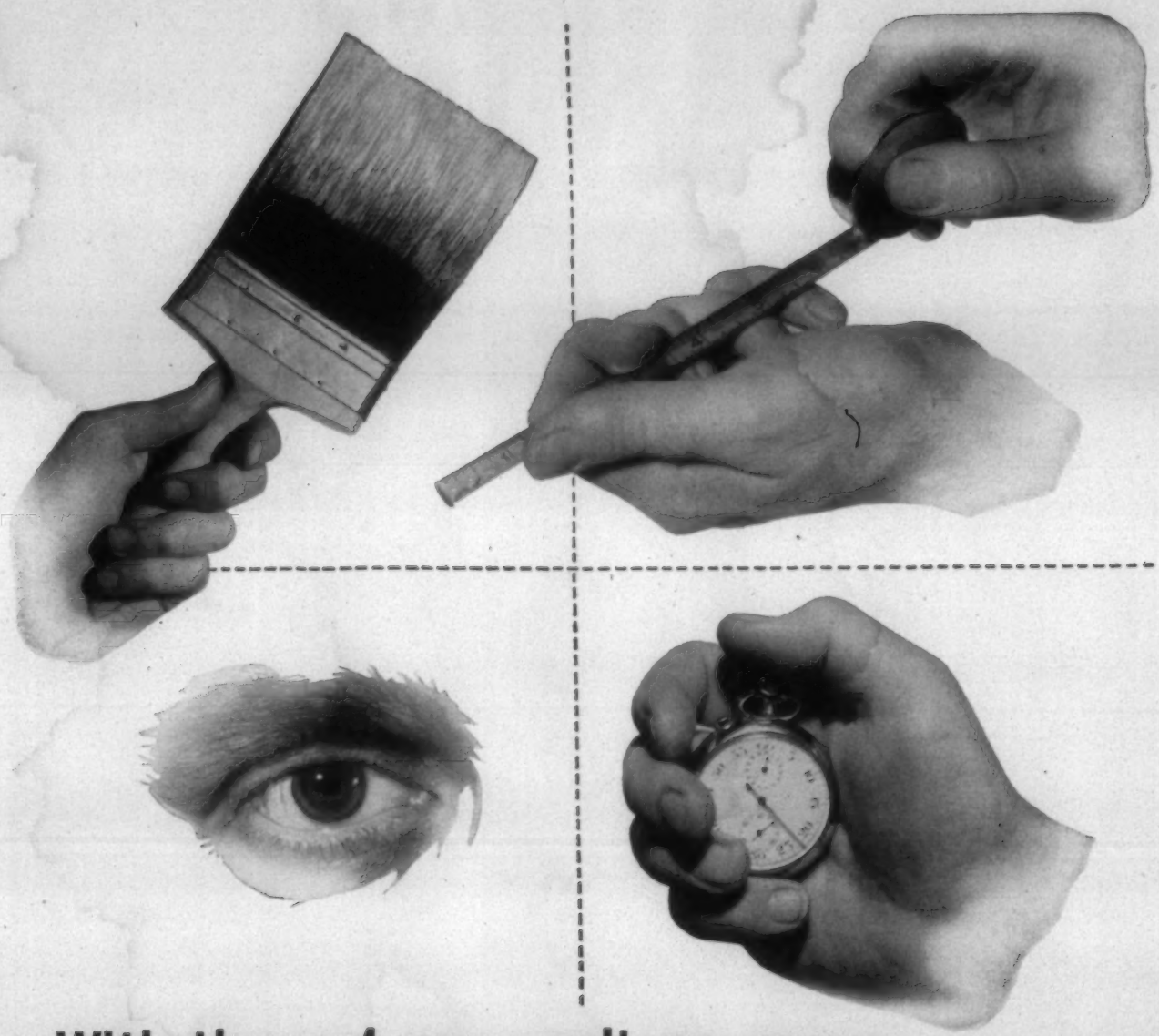
Check one { _____Payment enclosed with order (publisher pays postage).
_____Send bill upon shipment (postage charged to buyer).

Signed:_____*(please print)*

_____*(firm)*

_____*(street address)*

_____*(city, zone & state)*



With these 4 you can't go wrong

in figuring your painting costs

Funny how so many people think that the price per gallon is the key to lower painting costs, when the *real* factors in low-cost painting are the brush, the tape, the eye and the clock.

Sure, paints differ in price . . . and Barreled Sunlight costs as much if not more than any of them. But if you compare a gallon of Barreled Sunlight with any other paint . . . (1) by the amount you have "ready for the brush" after thinning; (2) by the yardage you get per gallon; (3) by the bright, clean, thorough coverage you get with one coat; and (4) with the great savings in labor you realize through faster application . . . there will be no question in your mind that for a high-quality, long-lasting paint job Barreled Sunlight will *always cost less.*

Go into your paint cost problems thoroughly. Our representative will gladly show you how much more for your dollar you will get with Barreled Sunlight. Write and he'll call.

U. S. GUTTA PERCHA PAINT COMPANY, 5-A Dudley St., Providence, Rhode Island

Barreled Sunlight *Paints*

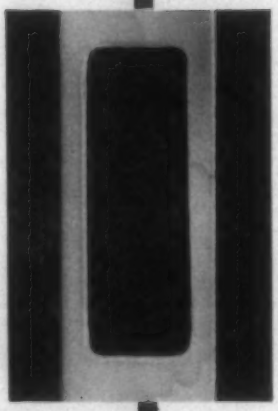
In whitest white or clean, pleasing colors, there's a Barreled Sunlight Paint for every job

It always costs more not to paint!

A REVOLUTIONARY development ...for Better Weaving

"Slide-tex" FLAT STEEL HEDDLES with special RECTANGULAR THREAD EYE

The Smoothest heddle eye ever produced!

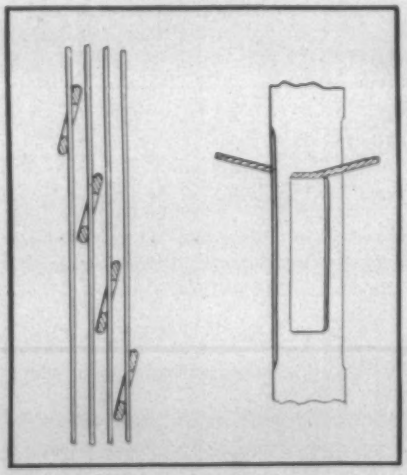


Weaving overseers everywhere will find in the new "Slide-tex" with its special rectangular thread eye, the answer to an old problem—a method of reducing warp breakage to a minimum. Warp threads passing through these heddles are subjected to far less abrasive action, resulting in a better quality finished product.

These heddles are doubly rust-proofed, highly polished and available in two types:

TYPE 1 — straight heddles for low sley.
TYPE 2 — duplex heddles for high sley.

Numerous tests have shown *amazing* results even when weaving extremely sensitive, low denier, flat and highly twisted acetate rayon. The same advantages are obtainable in the weaving of pure silk, nylon, cellulose, cotton, wool, linen and other fabrics.



The diagram at left shows how threads pass in a straight line through the rectangular eye of the new "Slide-tex" heddle without any change in direction. It is the only heddle having the thread resting on the total horizontal length of the eye, thus reducing to a minimum the possibility of damage through friction.

★ ★ ★ ★ ★ ★ ★ ★

You'll find in the new "Slide-tex" heddle, with its rectangular thread eye, many advantages over the well-known eliptical or long oval type. In addition to the reduction of friction on the warp thread, this new heddle also takes up less space in the harness frame than other types. Many mills in all parts of the world have fully tested and are now using "Slide-tex" heddles as standard equipment on their looms. Write today for samples, complete information, technical details and for other outstanding precision made, weave room accessories.

H. J. THEILER CORPORATION • Whitinsville, Mass.

DISTRIBUTORS

NORTH
Matthews Equipment Co., Providence, R. I.

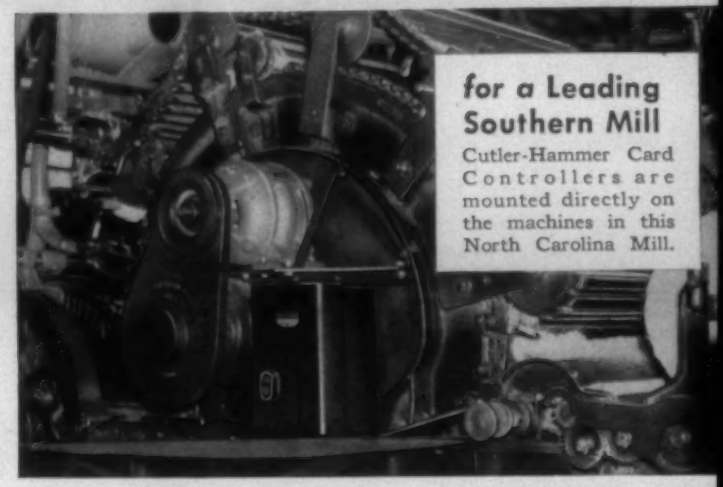
SOUTH
Textile Specialty Co., Greensboro, N. C.

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY

for Amoskeag-Lawrence.

The Amory Mill at Manchester, N. H., uses Cutler-Hammer Combination Starters on these cone reducers.



for a Leading Southern Mill

Cutler-Hammer Card Controllers are mounted directly on the machines in this North Carolina Mill.

for Springs Cotton Mills

at Kershaw, S. C., plant. Cutler-Hammer Loom Switches for each group of 10 looms are here mounted in single enclosures on adjacent building columns above mill traffic. Note also single combination starter installed ahead of each group.

One question that answers itself

No responsible textile mill executive will decide the question "*What* motor control?" except in the light of *one fact*. And that is the fact that *profitable* textile production results from the integration of many machines into a single harmonious production unit. The need for such integration spells out the answer to the question right there. For this integration certainly calls for the *best* motor control engineering experience available . . . certainly calls for the *most competent* motor control design and construction available . . . certainly calls for a *proved dependability* in motor control performance. There is only one make of motor control that meets all these specifications, the product of the pioneering specialists in motor control since 1892. CUTLER-HAMMER, Inc., 1455 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
MOTOR CONTROL
C-H

CUTLER-HAMMER LOOM SWITCH

for fewer shutdowns, greater production, easier maintenance

Pushbuttonoperation—most preferred for this type of starter. Stop button can be padlocked.

Stronger, smaller, drawn steel case. Unique welded-steel mounting pedestal available to create a *complete* assembly with unparalleled resistance to mechanical damage.

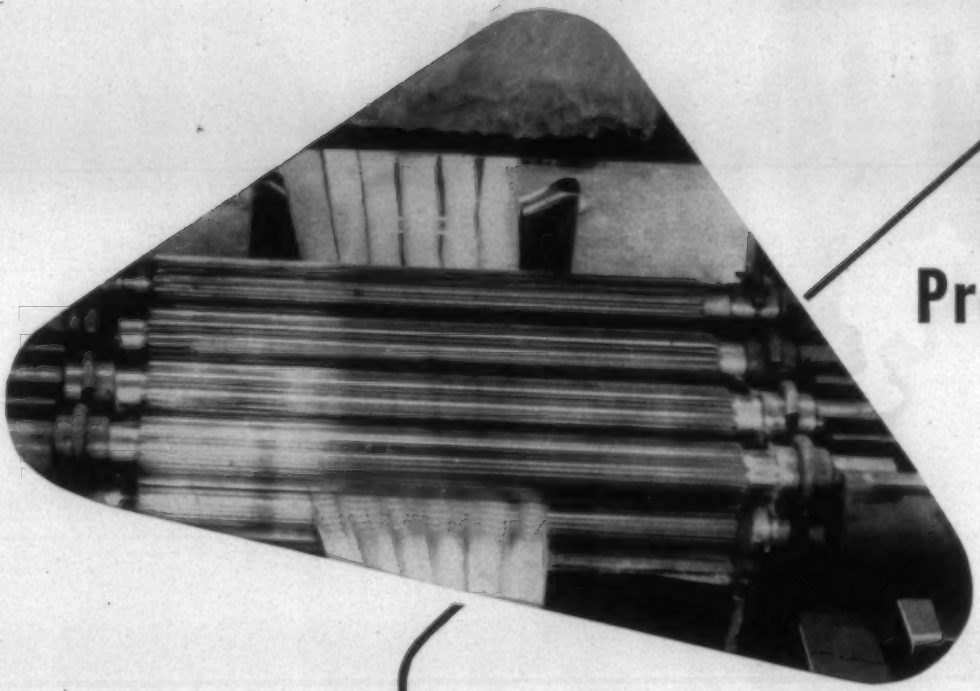
Lint-proof enclosure—close fitting cover (even around pushbutton well) limits entrance of lint and dust.

Service proven, positive make, quick break operating mechanism built on *steel* framework.

"Out in the open" contacts for quicker inspection and easy renewal *on the job*. Most dependable overload protection—famous Cutler-Hammer eutectic element type—prevents unnecessary shutdowns without sacrifice of *positive* motor protection.

Vibration resistant. Mechanism "floats" in truly effective *live* rubber mounting bushings.

IDEAL High Speed Ball Bearing Drawing Equipment*



Doubled Production

Improved Quality

This equipment has been called the most important development in drawing in fifty years.

Ideal High Speed Ball Bearing Equipment runs at sustained high speeds formerly considered impossible. All friction contacts are permanently sealed ball bearing. Adjustments are seldom necessary and dismantling and cleaning are needed only at long intervals.

This equipment created great interest at the Southern Textile Exposition at Greenville and its astonishing efficiency has been proven in every one of the many mills in which it has been installed. Write today for full information.
*Patented

Ideal Industries, Inc.
Bessemer City, N. C.

Rapidogens® for printing

fast colors on cotton, rayon and linen

brilliant colors outstanding for clarity and depth.

extensive color range many important shades are exclusively GDC.

fastness excellent fastness to washing—very good fastness to light.

powders and solutions both forms are available.

application develop rapidly in acid ageing—many can be developed in neutral ageing.

versatility can be printed alongside Indanthrenes and Algosols.

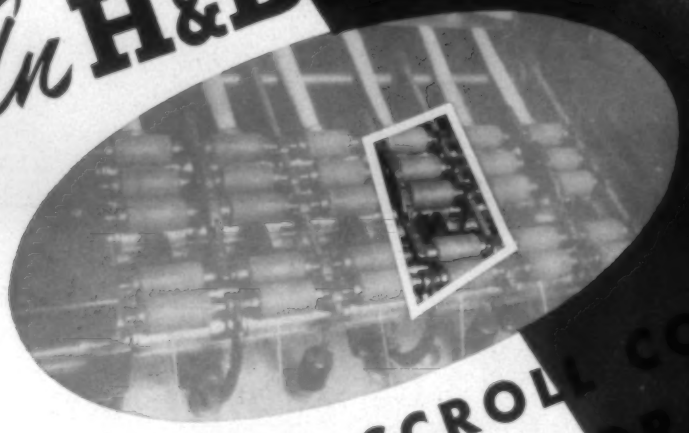
economy combine quality with ease of application.

GDC GENERAL DYESTUFF CORPORATION

435 HUDSON STREET • NEW YORK 14, NEW YORK

BOSTON • CHARLOTTE • CHICAGO • PHILADELPHIA • PROVIDENCE • SAN FRANCISCO

An H&B Exclusive!



PATENTED SCROLL CONDENSER ON H&B HIGH DRAFT SLUBBERS

Outstanding in fiber control and flexibility, H & B High Draft Slubbers represent a new high in operating efficiency. And here's why . . .

The very heart of the H & B System is the patented scroll condenser used on both the 4-roll and 5-roll drafting arrangements. As illustrated here, the sliver is first subjected to an extended break draft, condensed, and then drafted again.

In the 5-roll system, shown above, the drafted cotton leaves the third roll in a thin web and the elliptical-shaped, flared mouth of the scroll condenser compacts the sliver bulk without impeding the action of the fibers. The scroll method of compacting the fibers provides an action which assures an even strand.

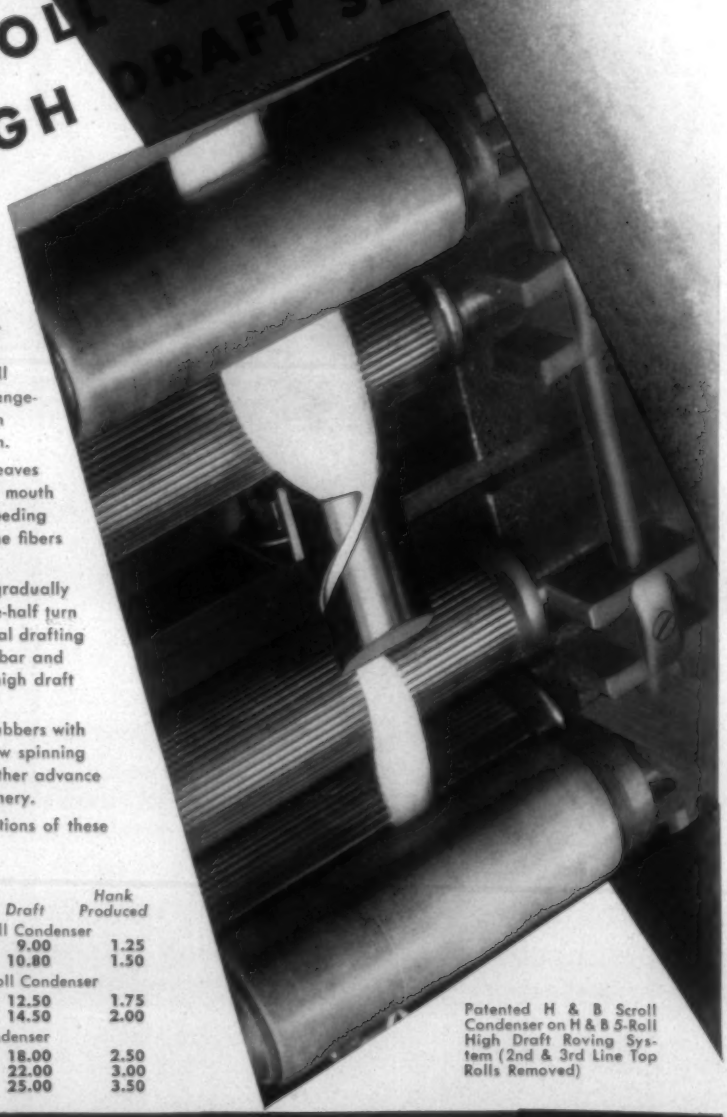
The scroll condenser turns over the condensed ribbon gradually without disturbing parallelization and gives it an actual one-half turn of twist to promote better condensing and control in the final drafting zone. Made of bakelite, the scroll condenser is fixed on a bar and traverses in conjunction with the sliver trumpet. No other high draft slubber can operate with better fiber control or flexibility.

Offering a wide drafting range, the H & B High Draft Slubbers with scroll condensers are a natural complement for H & B's new spinning systems in a mill's modernization plans. They represent another advance in H & B's exclusive achievements in modern textile machinery.

Ask your H & B representative about the many installations of these High Draft Slubbers now in operation.

RANGE OF DRAFTS

Drawing Sliver From Cans	Hank Sliver	Draft	Hank Produced
One Process Roving on a 10" x 5" frame with Scroll Condenser			
60 grain	.139	9.00	1.25
60 grain	.139	10.80	1.50
One Process Roving on a 9" x 4½" frame with Scroll Condenser			
60 grain	.139	12.50	1.75
60 grain	.139	14.50	2.00
One Process Roving on a 8" x 4" frame Scroll Condenser			
60 grain	.139	18.00	2.50
60 grain	.139	22.00	3.00
60 grain	.139	25.00	3.50



Patented H & B Scroll Condenser on H & B 5-Roll High Draft Roving System (2nd & 3rd Line Top Rolls Removed)

H&B AMERICAN MACHINE CO.

Builders of MODERN TEXTILE MACHINERY

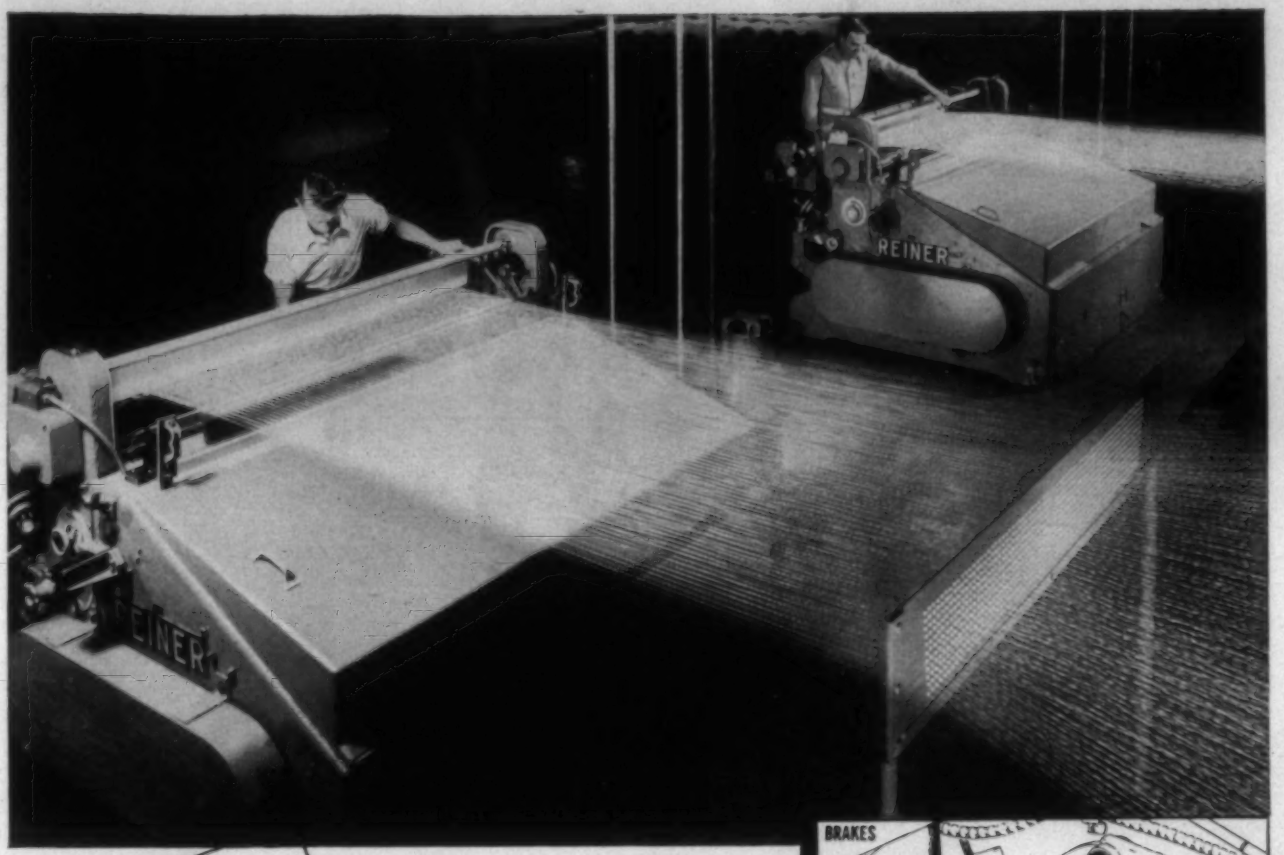
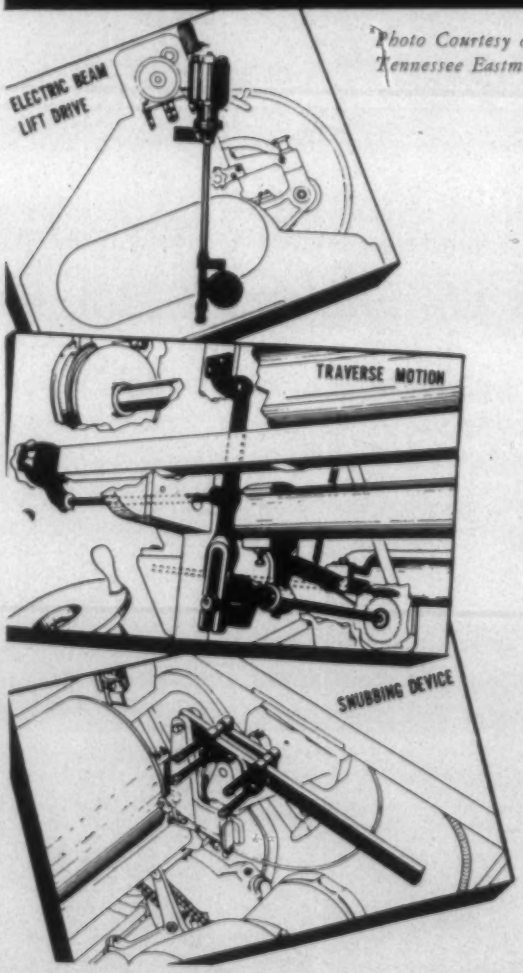
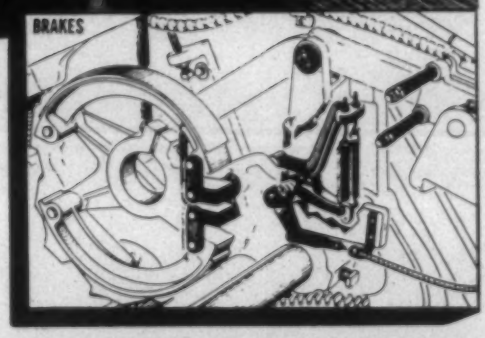


Photo Courtesy of Tennessee Eastman Corp.





AN EFFICIENT WARPING MACHINE

All Purpose — Full Width

designed to warp a fine delicate yarn at high speed without any undue strain on the yarn. It is built for beaming filament rayon, nylon, spun rayon, cotton, woolen, worsted, linen, acetate, etc. A fully illustrated catalog—yours for the asking—acquaints you with the most important features of this reliable and economic warper.

Reiner warping equipment is performing in more mills today than ever before. More than 20 features stress modern design, ease of handling, speed with safety, higher and more economical production. Write for details.

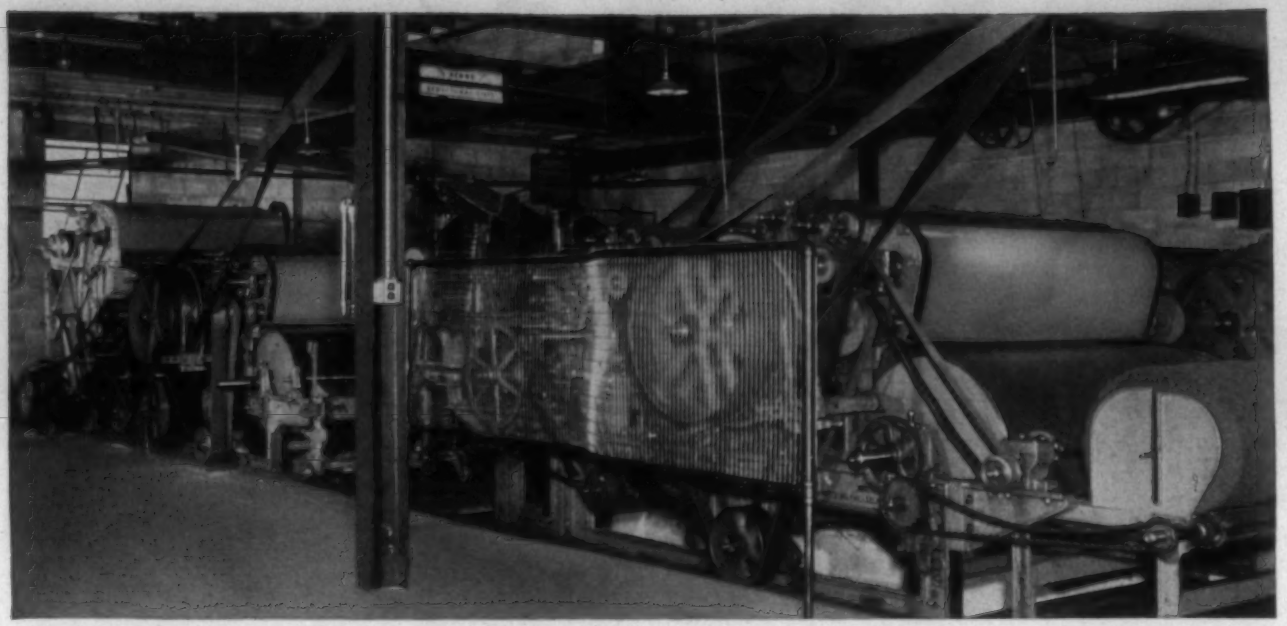
Reiner also offers Magazine Creels with mechanical and electrical stop motion—Single Type Creels—Truck Creels and Special Duty Creels. Ask for our richly illustrated creel catalog.

ROBERT REINER, INC.

550-564 Gregory Avenue Weehawken, N. J.

Telephone: UNion 7-0502-5

From New York City use LOngacre 4-6882



Waste Machinery

designed for your needs

from a simple picker to a complete system

With the tremendous increase in the demand for garnetted fibers that has come about during the past few years—Proctor engineers have put considerable effort into the development of equipment to meet that demand. As a result — it is possible for you to have Proctor equipment installed in your plant that is specifically designed to meet your needs—whether those needs indicate a simple rag picker or a completely automatic system for reducing fabric to fiber.

Many advances have been made in handling garnetted stocks to keep pace with the influx of rayons, nylons and other synthetics which are today appearing in the waste markets.

Proctor equipment is today producing better garnetted stocks than ever in its history . . . more of it and at costs considerably under that of any garnetting plants equipped with less recent equipment.

For the maximum in waste plant efficiency—investigate Proctor equipment. Tell us your needs today—we'll make recommendations based on commercial applications of Proctor waste machinery in use in all types of garnetting plants throughout the country.

Much Proctor drying equipment and textile machinery is covered in full or in part by patents or patents pending.

PROCTOR & SCHWARTZ · INC ·
679 TABOR ROAD · PHILADELPHIA 20 · PA ·

Designers and Manufacturers of

AUTOMATIC BLENDING and STOCK CONVEYING EQUIPMENT · CARDING and GARNETTING MACHINES · DRYERS FOR STOCK · YARN · PIECE GOODS · NYLON SETTING

Direct Dyed

but triple fast

Not just fast to laundering and perspiration—fast to light, too!

Yes, CUPROFIX colors and after-treatment give cotton and rayon fabrics such a high degree of fastness *to all three* . . . that direct dyeing now compares favorably with more expensive vat dyeing!

But *only* with CUPROFIX can you expect direct-dyed fabrics to have satisfactory fastness to *sunlight.* Only CUPROFIX gives you triple fastness in direct dyeing.

Economy—and Quality, too!

You save many dollars when you use direct dyes. For pennies more—relatively—you can make the big saving *without* sacrificing quality . . . and compete successfully with many vat-dyed fabrics.

Get acquainted with CUPROFIX now—write us for Booklet U. S. 125. SANDOZ CHEMICAL WORKS, INC., 61 Van Dam St., New York 13, N.Y.

Label Resin-Treated Garments "WASHABLE"

Adding CUPROFIX to the resin bath increases fastness to washing sufficiently to permit labeling garments "washable" instead of just "dry cleanable". It also:

materially increases efficiency of the usual resin treatment

eliminates in many cases the effect of resin on light fastness.

SANDOZ CHEMICAL WORKS, Inc.
61 Van Dam Street, New York 13, N. Y. Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. Other branches at Providence, Paterson, Chicago.

Fast to Light · Wash · Perspiration
Pressing · Cleaning

CUPROFIX

BY SANDOZ

SANDOZ *thinks ahead with textiles*

SANDOZ

For perfect Teamwork

Follow-thru

with ORANGE LINE LOOM LEATHERS

Here are three members of the big team *in action!* . . . for this photograph was taken at 1/20,000th of a second while the loom was doing 175 picks per minute!

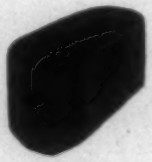
It's one picture in a series of amazing "stop action" photographs showing how G&K Textile Leathers *follow-thru* to prevent shuttle bounce, cut shuttle cost, stop kinky filling . . . Here's proof that you can *follow-thru with leather* for better output, less down-time, bigger profits. Start with the *Big Three* in the famous G&K Orange Line:

BILL
CUT SHUTTLE COST

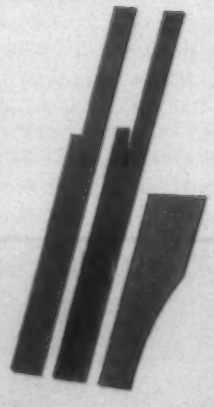
STOP
KINKY FILLING

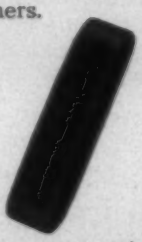
$
INCREASE PROFITS

First, *the famous PICKMASTER picker,* precision-built of special Hairitan® Leather — the only material that can withstand the repeated blows of the shuttle spur without causing shuttle bounce or getting over-heated. Shuttle bounce causes kinky filling, and over-heated spurs cause trouble.



Second, *the famous BOXMASTER Hairitan Leathers.* Again a special Hairitan Leather that maintains the original dense, high-friction surface as it wears. No coarse fibres to catch filament rayon —no rough surface spots to interfere with the smooth boxing of the shuttle. You can adjust your boxes and forget them when you cover with BOXMASTER Leathers.





Third, *the famous Hairitan Check Strap,* hair-on or hair-off, straight or endless types. These are built to *flex* and *flow* twice a second, month after month to cushion the picker stick without wearing on the edges. Only leather can stand up in this tough service — and G&K Check Straps of Hairitan Leather are proving that a good check strap is a Loom Fixer's delight!

Follow-thru with leather for better, more profitable loom hours. And look to Graton & Knight and its southern affiliate, Dixie Leather Corporation, for the best in TEXTILE LEATHERS.

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Outlaw Collective Strikes

THE issues confronting the American people today must be solved quickly, if our structure of ordered liberty is to be preserved. Ordered liberty means liberty under law. There can be no ordered liberty under lawlessness.

The time for appeasement and political pussyfooting is past. The American people must either reassert their rights to life, liberty, and the pursuit of happiness; or else recognize that they will, in the future, enjoy only such concessions or temporary privileges as an organized minority pressure group may permit.

What is the issue today?

When the camouflage is torn away, the issue is clearly revealed. It is this:

Shall the labor unions, or any other organized minority pressure group, be permitted to formulate and demand what they please, without previous ascertainment of their justice or injustice by an impartial tribunal, and then compel compliance with those demands through the use of their own collective powers and resources; with accompanying threats, terrorism, force, and violence; with disregard and impairment of the similar and equal rights of others; with resultant danger to our entire economic life; with deliberate challenge and flouting of government; and with suspension of law and order?

Or shall the labor unions, like all other citizens, be required to submit their claims to an impartial judicial tribunal; where the rights of both parties to the controversy can be heard and determined under due process of law, through the peaceful processes of orderly judicial procedure; where the public can be represented and protected; and where the judgment of the court will be enforced by the commonwealth, and not by mob violence?

The unions can enforce their demands through the use of their collective force and resources; they are exempted from the injunctive processes of the courts, through which injustice and violence can be restrained at the start; they are exempted from collective liability for collective action; they have been placed outside the law, and above the law. They have become a superstate. Either government must control them, or else they will control government.

The great weapon of the labor unions is the collective strike with its accompanying picket lines, threats, terrorism, force, and violence. That weapon has been made more effective through the closed shop, and other similar practices. Today it is a sword of Damocles, suspended by a hair, and threatening the welfare and even the existence of the United States.

The unions must be disarmed. The weapon of the collective strike must be removed from the nation.

Substantially every right-thinking American citizen wants to safeguard the rights of the laborers; and also to safeguard the similar and equal rights of the employer, of non-members of the union, of the general public, and to prevent any interference with, or defeat of, the administration by government of its entrusted authority and of its duty to secure and safeguard the equality of rights of all citizens.

But the gains of labor, as asserted by the unions, means the special privileges and immunities now enjoyed by the unions which impair and defeat the similar and equal rights of others. Government was established to prevent just such impairment and defeat of the equality of human rights.

Similarly everyone believes in the wisdom and desirability of collective bargaining. The representatives of the employees should confer and bargain with the employer as to wages, hours of work, working conditions, safety, health provisions, social security arrangements, and so forth.

But collective bargaining does not mean that, in case of disagreement, the union as one of the parties shall be empowered to compel compliance with its demands through the exercise of its own collective powers and resources; while the employer, all non-members of the union, the public, and even government itself, are helpless; because the unions have been exempted from the equitable control of the courts and from collective liability for their collective acts.

In case of disagreement between the union and the employer in their efforts to arbitrate and settle a dispute, then all arbitration should cease; for arbitration is essentially compromise and appeasement. The unsettled issues should then be submitted to a court, which will be able to bring out all the facts and evidence, to administer justice (not compromise or appeasement), and to protect equally the rights of all laborers, employers, and of the public.

But unions apparently do not seek justice—rather they seek favoritism.

There is no more justification for a labor union to enforce compliance with its arbitrary demands through the use of its collective powers and resources, with its accompanying threats, terrorism, force, and violence, than for the Ku Klux Klan to follow a similar procedure.

Labor unions, as such, have no collective inherent rights. All inherent rights are individual, and there is no such thing as a collective inherent right. The Creator endowed each human being with an equality of such rights, but with a disparity of powers or talents. No human being or institution can change or alter that equality of endowment of inherent rights.

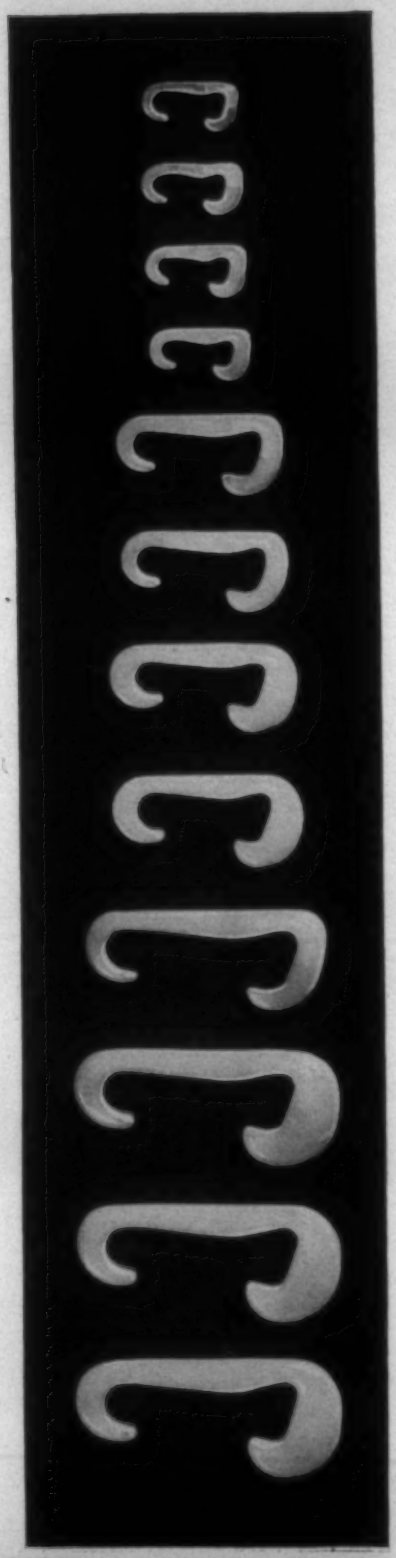
The members of a labor union, acting collectively, have no greater or different rights from those held by every non-member individual. The mere fact of acting collectively does not change the character or volume of rights held by each member. Through collective organization and action, the union members can command greater collective powers and resources. But they are not justified in using their collective powers and resources to defeat the equality of inherent rights.

Every human being has an equal inherent right to work, to quit work in the absence of a binding contract, to contract to work for another, and to contract with others to work for him. The right to work is of no more dignity than is the right to contract. And each of these is an individual right.

A man has a right to quit work, when he chooses, in the absence of a binding contract. But when he exercises this right to quit, he quits; and thereafter he has no conceivable right to prevent others from accepting the job which he has voluntarily abandoned; nor has he any conceivable right to limit or control the employer's right to contract with others to take that job. Nor has he any right, in connection with others, to use the collective powers and resources of a labor union to impair the equal rights of non-mem-

INVESTIGATE

nylon travelers



PROVE TO YOURSELF THESE IMPORTANT ADVANTAGES

1. Higher spindle speeds.

2. More yardage on your present bobbins.

3. Much less lubricant required.

4. Less end breakage.

5. Longer life. Less down time for changing travelers.

6. Cleaner frames—cleaner rooms.

1. LIGHT
2. STRONG
3. RESILIENT
4. SMOOTH
5. TOUGH
6. EXTREMELY RESISTANT TO WEAR

Many thousands of these Nylon Travelers are in daily use—giving complete satisfaction.

SEND FOR SAMPLES

MANUFACTURED BY
THE CLARK THREAD COMPANY, INC.
264 Ogden Street, Newark 4, New Jersey

SELLING AGENT
THE SPOOL COTTON CO.
264 Ogden Street
Newark 4, New Jersey

bers to take the job, or the right of the employer to employ them. The American people could well reread the parable of the vineyard, related in Matthew 20, Verses 1-15, as showing our Lord's conception of the sacredness of the rights of property and of contract, of the rights of employer and of employees.

The collective strike, as exercised today by the unions, is neither more nor less than a conspiracy by an organized group to destroy that equality of inherent rights which American Government was established to secure; and to enforce compliance with its demands by unlawful means, through the use of its own force and resources in defiance of government and in violation of public order, safety, and welfare.

A conspiracy has been defined by the courts as—

"A combination formed by two or more persons, by concerted action, to accomplish a criminal or unlawful purpose, or some purpose not in itself criminal or unlawful, by criminal or unlawful means."

Measured by this test, the labor unions, as operated today, are unlawful conspiracies on both counts. They seek to accomplish unlawful purposes through the use of unlawful means.

The collective strike is the chief unlawful means now used by labor to accomplish its unlawful purposes. Whatever may be hereafter done to prevent any group being organized for unlawful purposes, we should now take away from the unions the chief weapon (or unlawful means) which they arbitrarily use to accomplish their unlawful purposes. This would effectually and promptly end the present wave of strikes. It would re-establish our economy and enable us to resume production and avoid a destructive economic collapse. It would largely restore law and order, and end national economic unrest.

The collective strike should be immediately outlawed.—*Charles Hall Davis,* Petersburg, Va.

For Association Mayhem

DON'T come to the meetings. If you do appear, come late. If the weather doesn't suit you, don't even think of it.

Don't praise the work of the officers or other members. Find fault with it instead. Never accept an office or a committee appointment because it is easier to criticize than to do things.

Don't attend committee meetings if you should be appointed to one. And if you're not appointed, get sore about it.

Don't offer your opinion on important matters when asked to do so by the chairman. Tell him you have nothing to say. After the meeting tell everyone how things ought to be done.

Don't do a thing more than is absolutely necessary. When other members pitch in and use their ability to push matters along, howl that the association is run by a clique.

Don't bother about getting new members. Let George do it. If George won't do it, let the secretary do it.

Don't ever be satisfied. When entertainment is given, tell everybody money is being wasted on blowouts which make a big noise and accomplish nothing. When no entertainment is given say the association is dead and needs a can tied to it.

Don't ask for tickets until all are sold. Then swear you were cheated out

helping you
make
COLOR
behave

One sure step towards consistent color satisfaction in dyeing and printing is to investigate the A.A.P. textile auxiliaries listed below. Technicians from our nearest branch will be happy to show how each has helped leading dyers, finishers and printers... *how each can help you.*

★ **LEVELENE** For wetting-out...preparing... dyeing...finishing. Dependable as a vat dyeing retardant and as a vat stripper.

★ **FASTOGENE** Gives amazing water-fastness in a simple after-treatment. For dyeing—printing—finishing of cottons, multifibres.

★ **STABILON** A *must* with Napthols. *Minimizes* crocking and brightens Napthol shades.

★ **DEPUMA** An *antifoaming* agent for printing—dyeing—soaping. Breaks foam in dye liquors and print pastes *without emulsifying or evaporating.*

For full information on these and other A.A.P. products, along with data pertinent to your individual problems, consult our nearest branch.

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THE NEW "C6" TWISTER will satisfy BOTH requirements!

From both the production and financial viewpoints the new Whitin Model "C6" Twister is a sound investment for your mill. Performance tested by the yearly production of millions of pounds of synthetic yarn, it is designed to produce packages up to 4 lbs. with a wide selection of winds produced by Whitin patented builders. Simplicity of operation, plus ease in creeling of supply packages makes this machine popular with operators and management alike.

Write today for illustrated folder giving complete information about the model "C6" Twister and describing its many special features.

Whitin MACHINE WORKS

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CHARLOTTE, N. C. • ATLANTA, GA. • SPARTANBURG, S. C. • DEXTER, ME.

of yours. If you do get a ticket, don't pay for it.

Don't return reservation cards. If you do return yours, don't come. If you don't receive a bill for the reservation, don't pay. But if you do receive a bill for the reservation postpone paying until you're asked for the money. Then get sore because you've been dunned. And, if you're asked for the money after you've paid, resign from the association or at least suggest to some of the members that the treasurer tried to work you or is manipulating the accounts.

Don't tell the association how it can help you. But if it doesn't help you, resign. And if you receive benefits without joining, don't even think of it.

Don't take anything for granted. If the association doesn't correct abuses by other members howl that nothing is done. If it calls attention to abuses in your own right, resign from the association. When you attend a meeting, vote for a thing, then go home and do the opposite. Agree to everything said at the meeting and disagree with it outside.

Don't ever co-operate with the association. Get all the assistance you can from the organization but don't give *it* any. Talk co-operation so far as *you* are concerned but never co-operate with the other fellow.

Finally, when everything else fails, roll the drums by cussing the secretary, the other officers and the members.—*Feed Institute Digest.*

Our Stand In 1951

AMERICA is certainly a land where one can prove that competition and the American system of doing business will get results. Because competition adds incentive to everything that we do and places our job as well as our fun and sports on a game basis. Without competition there soon would be only one way of doing things and soon there would be no variety or new ways or new things.

We have competitors in everything that we do in America; not only our business, but in our ways of life and in our fun.

In business, our competitors are trying to put out a better piece of goods at a cheaper price and better quality. New and improved ideas and ways of doing the job makes this possible. To stay in the field each must meet his competitor's deal and do a little better. There is selling competition and buying competition. A business concern has to meet competition in both of these fields.

There are different kinds of competition — price, quality, delivery and kinds of goods.

A yard of cloth is not a yard of cloth just because it measures 36 inches.

Production and technical men are learning new and better ways every day to do the job better. Office workers know that the way a task is handled will determine where the company's strength is being sapped.

Lead men who are keen on proper supervision are keeping their company up at the top.

Operators who handle goods deftly and avoid waste, are helping meet competition and make jobs for others.

Maintenance men and those who keep machines and equipment in order are performing tasks directly related to lowering costs and improving quality.

When customers are satisfied, it makes for new ones and repeat business. Nineteen hundred and fifty-one will still be competitive. We want it so because it is the American way. Competition has always been met. This is because every worker has realized he is a part of the machine. As we go into the new year we can continue to fill our place and fill it well; we only must work together to meet competition.—*The Commentator,* Union Bleachery, Greenville, S. C.

A Negro Editor's Views

ONE of the soundest and most logical statements on race relations and segregation that has come from any source in a long time is an article written by a distinguished Negro, Davis Lee, editor and publisher of a weekly newspaper, *The Telegram,* published in Washington. The article in question appeared under the caption, "Has the Negro Been Misled in His Civil Rights and Integration Fight?"

Answering the question at the outset, Lee says, "The more I travel, listen and observe, the more convinced I become that the Negro has been grossly misled in this matter of integration and civil rights." He adds: "It appears to me that the first things should come first and that our economic well-being is of greater significance than the privilege or right to attend a white school or to associate with white people on an equal social basis provided by Supreme Court decisions and pressure legislation.

"As a Negro, and an American, I naturally want to see my race enjoy every right, privilege, and opportunity enjoyed by any other American, but I am opposed to any type of agitation designed to deprive the other fellow of the right to be associated with his own kind exclusively, if he so desires. I would like to reserve such a right for myself and definitely would not want it encroached upon by a Supreme Court edict or any other kind of interference."

As to the school facilities provided for white people and Negroes in the South, the Negro editor makes this very significant statement: "While the South does not provide ample or adequate modern school facilities for Negroes everywhere, neither does it provide completely modern facilities for white schools, because the money is not available for such a vast undertaking. However, rapid progress has been made, and in Montgomery, Alabama, and several other communities the Negro schools far exceed the white schools in modernization and physical appearance.

"Neither do the majority of Southern Negroes nor the majority of the whites approve of the present program to disrupt a custom which has served both races well down through the years and contributed so much to the Negro's economic security."

Editor Lee suggests an idea that presumably had not occurred to many people of either the Negro or the white race when he asks: "Just what would be the future educational status of the Negro in the South if the legislatures of all the Southern states would enact legislation withdrawing state financial support from all schools of higher learning, starting at the high school level?"

He says, "not only is this possible, but if it should come to pass, the Negro would be unable to finance his own educational program. Negro-financed educational programs have been a failure in the past, and nothing miraculous has happened which would cause a normal person to assume that the future holds any better prospect."

Davis Lee's views might well be pondered by the people of his race, and especially by their leaders, as well as by their white friends of the North and South. — *Charlotte* (N. C.) *Observer.*

Ashworth
CARD CLOTHING

Fall River, Worcester, Greenville and Philadelphia . . . four of a kind that can't be matched as a source of continuous supply of card clothing and similar products. These four widely separated Ashworth factories are your guarantee of dependable delivery.

But it's also good to know that when you specify Ashworth you're getting consistently high quality also — resulting from over 90 years' experience in cards and card clothing by one family.

To profit from that experience . . . to make your cards more efficient . . . ask us about the free Ashworth Surveys — today.

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Factory• Repair Shop† Distributing Point‡

PRODUCTS AND SERVICES

Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for All Types of Napping Machinery. Brusher Clothing and Card Clothing for Special Purposes. Lickerin Wire and Garnet Wire. Sole Distributors for Platt's Metallic Wire, Lickerins and Top Flats Reclothed.

4 FACTORIES . . . 6 REPAIR SHOPS . . . 7 DISTRIBUTING POINTS

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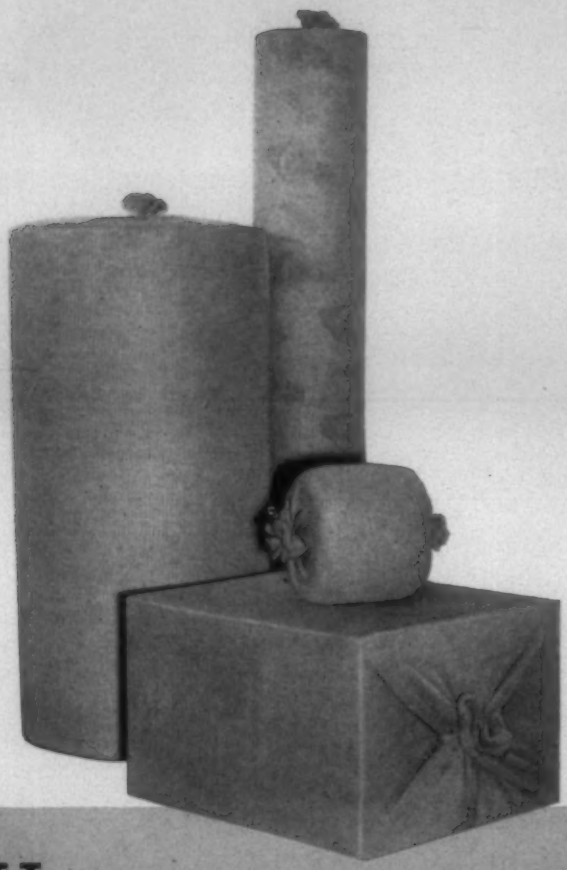
With HPC JUTE TUBING*

*Made in U. S. A.



PULL HPC OVER PACKAGE OR BALE

CUT AND FASTEN ENDS WITH WIRE

STENCIL AND SHIP

HERE at last is a fabric package cover that will completely modernize your shipping room with its scientifically designed economy and efficiency. This seamless cloth is made of strong jute yarn and is constructed so as to stretch and conform into a smooth, snug protective package or bale wrap. Regardless of package size, shape or weight—HPC JUTE TUBING fits like a glove.

CLEAN, EASY TO APPLY — **CUTS LABOR COSTS**
REDUCES MATERIAL WASTE — **EASY TO STORE**
200 YARDS TO A ROLL — **TAKES BRILLIANT STENCIL**

HPC JUTE TUBING comes in a wide range of widths. Contact your nearest Henley warehouse for samples giving the approximate dimensions of your package.

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High Strength Aluminum Alloy, Nylon-Armored, in a Twister Bobbin that meets every test

CONTROLLED BALANCE AND CONCENTRICITY Made to rigid specifications, with precision dies, ACROPAK Bobbins offer uniform balance and concentricity well beyond previously accepted standards.

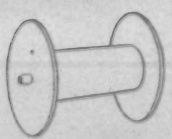
EXCEPTIONAL STRENGTH Aluminum alloy barrel and flange are joined by high-strength metal ring lock. Resulting assembly withstands most severe crushing strains and end thrusts of nylon yarn without distortion. Precision fit prevents yarn entrapment.

LIGHT WEIGHT Lighter than conventional spools and bobbins, ACROPAKS will permit faster handling with less operative fatigue. Also, twisting speeds can be higher with reduced spindle wear.

NYLON ARMORED Tough, resilient nylon rims reduce possibility of nicks and snags, resist wear of yarn drag, and may be replaced at little cost. Nylon bearings absorb shocks, retain accurate, uniform spindle fit and assure minimum of traverse setting.

COLOR-IDENTIFIED Flanges of ACROPAKS can be anodized in a variety of colors to permit identification of type of yarn carried.

LONGER LASTING, LOWER COST Since the service life of ACROPAKS is far greater than that of wood and fiber construction bobbins, the cost-per-year is much less. You save on bobbin inventory while you gain on improved production and waste elimination.



ACROPAK TAKE-UP BOBBIN

Aluminum alloy flanges and barrel are joined by high-strength metal ring lock. Resulting assembly withstands most severe crushing strains and end thrusts of nylon yarn without distortion. Precision fit prevents yarn entrapment.

Gudgeon is stainless steel. Precision manufacture assures uniform concentricity and balance which exceeds accepted standards.

Reduced weight eases handling. Unaffected by high steaming temperatures. Anodizing, in variety of colors, prevents yarn stain, permits yarn identification.

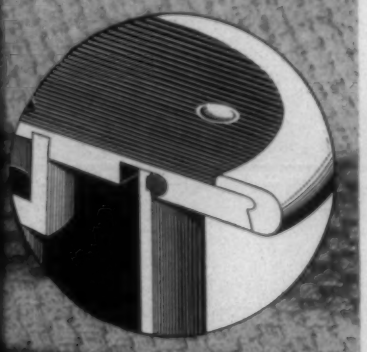
Ready...

the US answer to bobbin-killing synthetics

ACROPAK

VERTICAL SPINNERS, TAKE-UP AND HEADLESS BOBBINS

Patents applied for



You saw these completely new and different ACROPAK Bobbins at the Textile Show, and the oft-repeated question was . . . "when can I get them?"

Now, rigorous pretesting of every design feature under the toughest processing condition has been completed. Production of the proved designs is in full swing. Your orders can be placed now, and soon these money-saving ACROPAK Bobbins can be at work on your frames, ending the bobbin casualties that have been common for years in processing nylon and other synthetics.

Remember that ACROPAK Bobbins are entirely *new*—not an old type bobbin brought up to date. New techniques and new materials provide lightness, strength, and durability unequalled by any comparable bobbins.

BOOST PRODUCTION — SAVE YARN — DEFY WEAR

You can run higher speeds because there is no "dead" weight to wear spindle bearings, and because basically balanced ACROPAK Bobbins start true—stay true. You eliminate slubs, breaks, and waste because yarn flow over the lastingly smooth, tough nylon rims of the ACROPAK vertical spinner is unimpeded. Since they are virtually indestructible in normal use, your bobbin cost-per-year will be lower than you ever believed possible.

ACROPAK Bobbins can be made to fit all standard spindle dimensions and drives. Your U S representative is prepared to show you samples and discuss your synthetic yarn processing problems. U S Bobbin & Shuttle Co., Lawrence, Mass.

ACROPAK HEADLESS BOBBIN

Strength and durability far beyond normal need assured by Acrometal fabricated tube of aluminum alloy and gudgeon of stainless steel.

Much lower initial cost than for mandrel-cylinder assembly. One operation instead of five in take-apart means up to 75 per cent time saving. Absolute concentricity and balance assured by unique construction.

Can be anodized in various colors for yarn identification and to prevent yarn stains.

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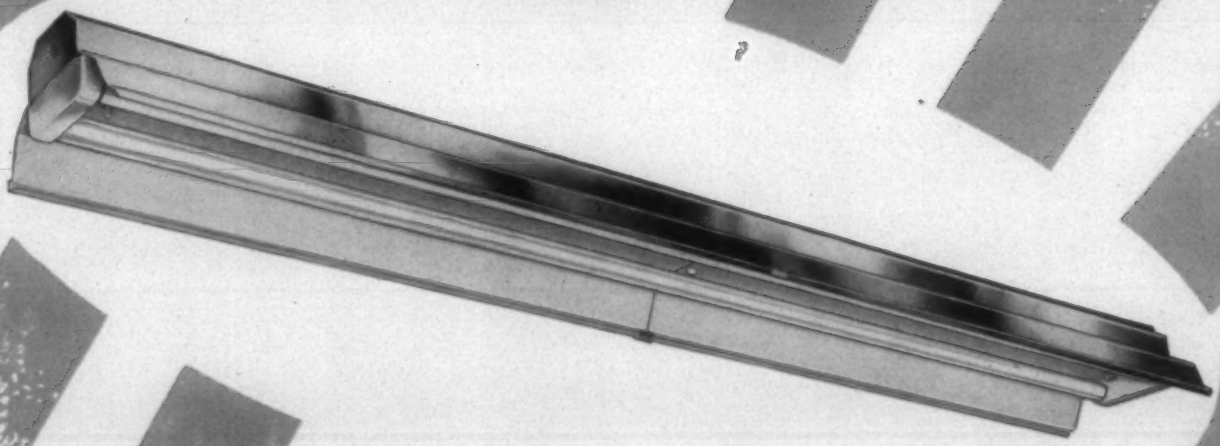
Modern as tomorrow!

New Wheeler RLM "Industri-Line" Slimline Fixtures



An outstanding, progressive step in Industrial Lighting! Wheeler Engineers have built into these newly-designed line of units 6 Better-Value Features. For greater value, greater efficiency, insist on Wheeler R.L.M. Slimline Fixtures!

★ High Output: gives more light per foot of lamp length.

★ Latest G. E. Turret Type Lampholders (depressable): for single pin contact, making lamp insertion and removal easy.

★ Reflectors in Sections: for greater ease in handling, each unit furnished with two open-end or closed-end porcelain enamel reflectors.

★ Individual or Continuous Mounting: extremely simple mounting operation.

★ One-piece Top Channels: made of heavy gauge steel. Finished in either porcelain enamel (recommended where excessive moisture conditions exist) or baked synthetic enamel.

★ Designed for use with two and three T-12 Slimline Single-Pin Lamps: Instant starting.

Get complete details from Wheeler Reflector Company, 275 Congress Street, Boston 10, Massachusetts.

Wheeler **REFLECTORS**

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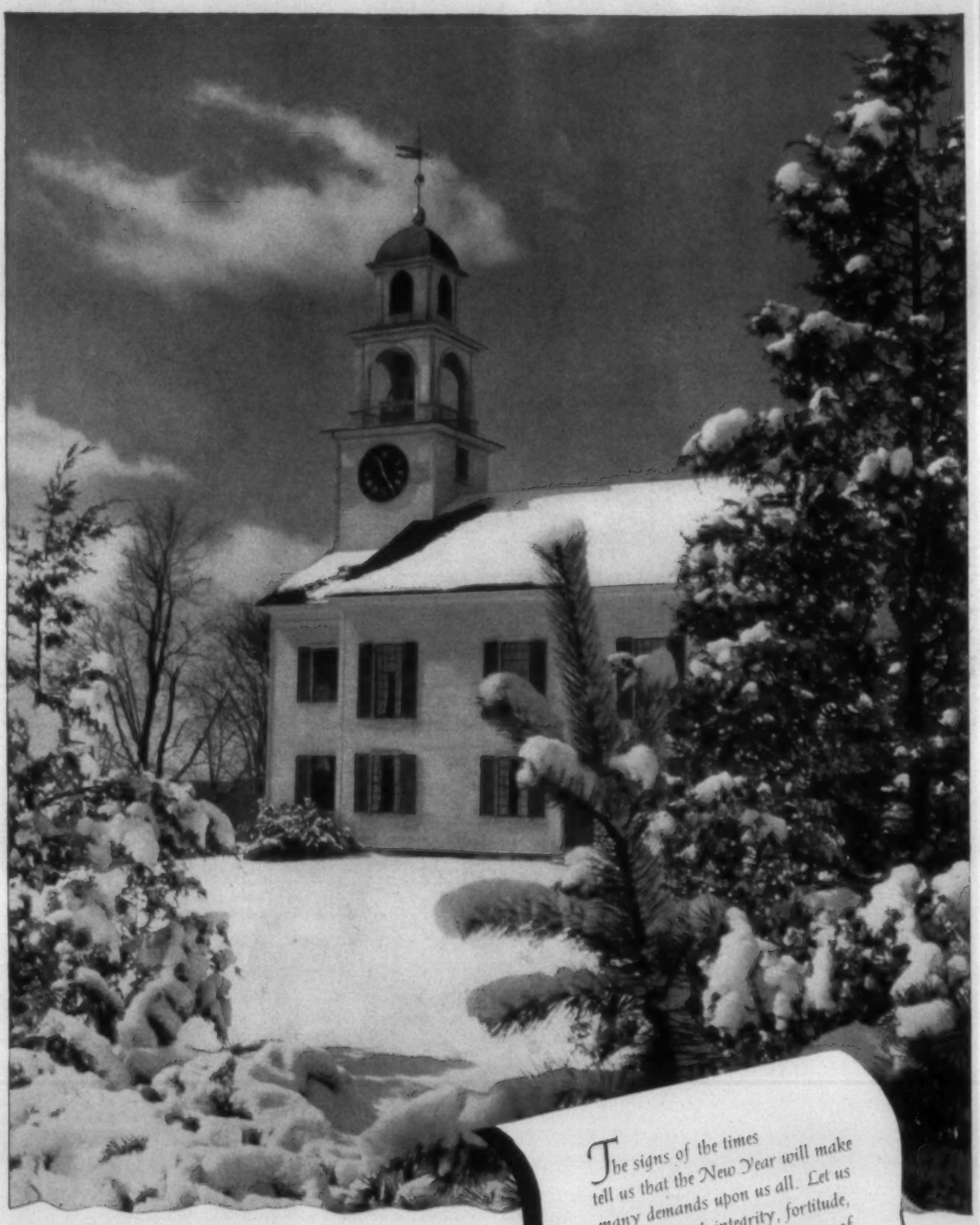
MADE BY SPECIALISTS IN "SKILLED LIGHTING" EQUIPMENT SINCE 1881



The signs of the times tell us that the New Year will make many demands upon us all. Let us meet them with integrity, fortitude, and with a complete acceptance of our personal responsibilities.

HOWARD BROS. MFG. CO. WORCESTER 8, MASS.

Harry C. Bixley

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in your new lines with
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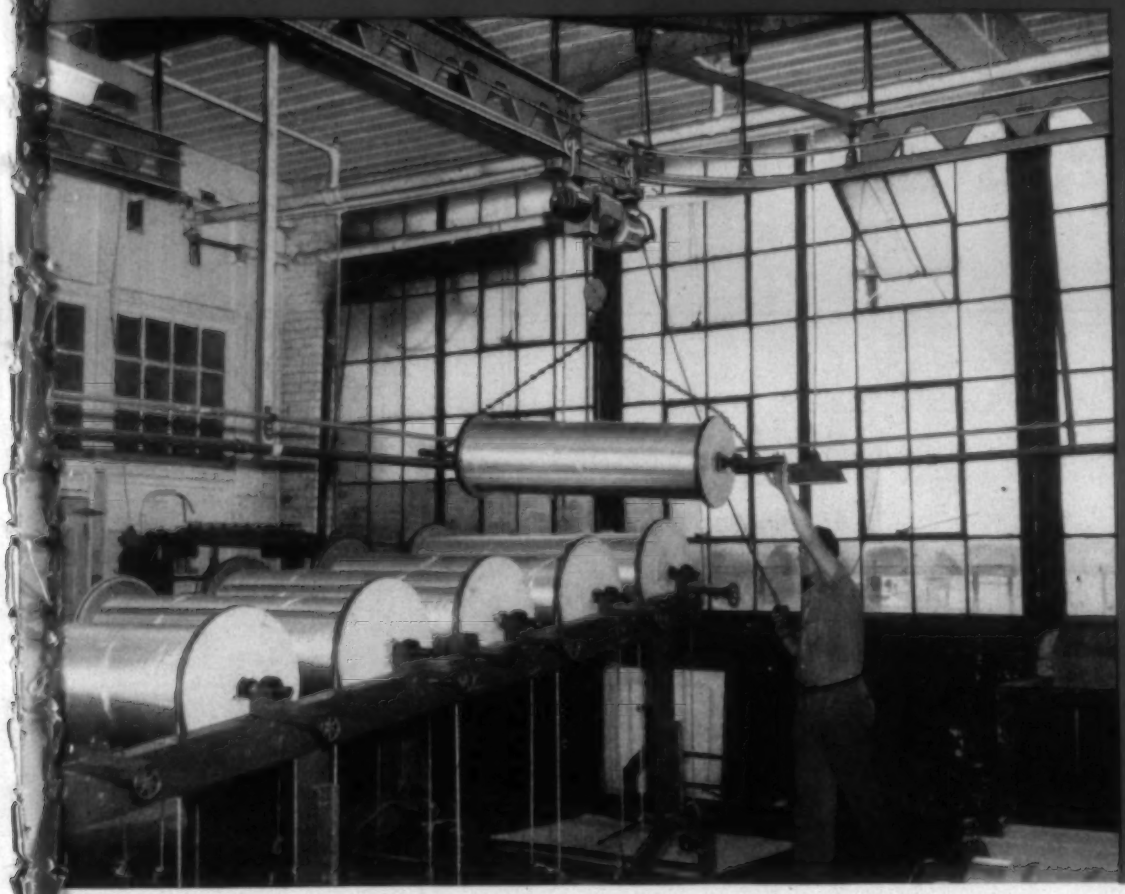
Overhead handling with Louden MONORAIL saves labor, time . . .



. . . lap handling from pickers to cards

. . . beam handling to and from the slashers

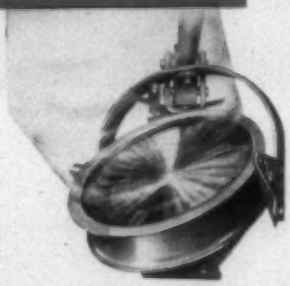
. . . weave loom beam to and from tying-in machine

. . . loom beam handling in the weave room

. . . roll or bale handling in finishing

. . . beam and cloth handling in the dye house

Automatic Ceiling Cleaner



Just push the control button and let the Louden Automatic Ceiling Cleaner do the rest. As it travels around the room on its overhead Monorail track, the Louden Cleaner alternately sweeps right and left to keep ceiling, lights, piping, ducts free of lint. Write for details today.

MODERN TEXTILE MILLS USE

Louden

OVERHEAD MATERIAL HANDLING

Production has been stepped up and labor costs stepped down wherever Louden Overhead Material Handling Systems have been installed in the cotton and rayon textile industries. In the photograph above one man is lowering a beam into the creel of a slasher, and doing it effortlessly, safely and precisely.

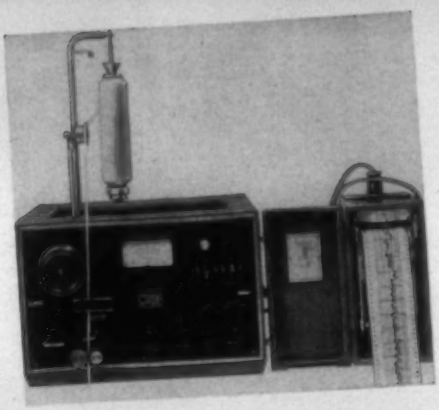
This is typical of how easy handling becomes with Louden Monorail equipment . . . for lap handling from pickers to cards, beam handling to and from the slashers, weave loom beam to and from the tying-in machine, loom beam handling in the weave room, roll or bale handling in finishing, and both beam and cloth handling in the dye house.

There are few departments of any mill where Louden Monorail Handling will not increase efficiency, quickly reflected in profits. Write for new, illustrated booklet, "Economical Material Handling", sent without obligation.

THE LOUDEN MACHINERY COMPANY, 302 COURT STREET, FAIRFIELD, IOWA

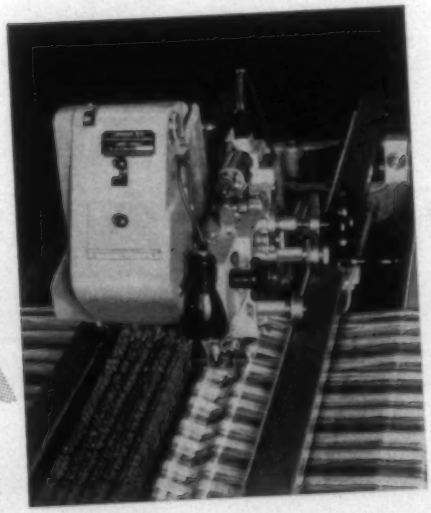
Save Labor and Time

with USTER Equipment



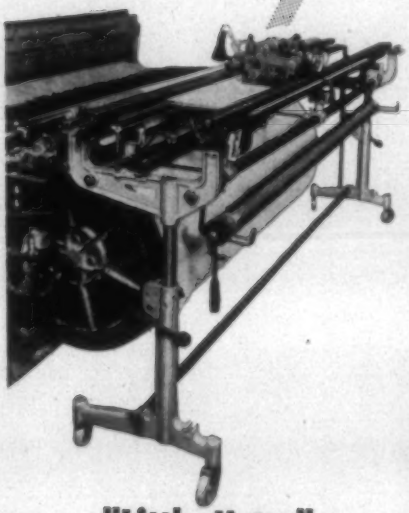
"Uster" Evenness Tester

The standard by which yarns are made, bought, and sold. Handles sliver, wool tops, roving, and yarns. Request Booklet #102 for details.



"Uster" Dropper

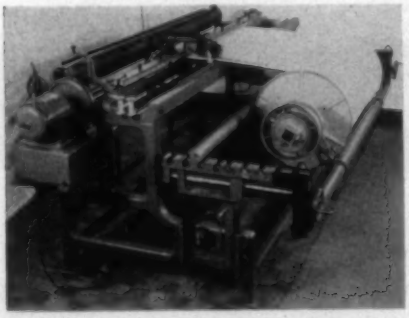
Automatically pins up to 18,000 open drop wires per hour—10 to 20 times faster than hand-pinning. The "Uster" Dropper shortens and simplifies tremendously the entire pinning process—saving hours of loom down-time. Request Booklet #47 for details.



"Little Uster" Warp Tying Machine

Saves 30% to 70% in tying time on any material. Ties portable or stationary. Ties up to 118 inch warps at one "bite". Incomparably fast, efficient, and versatile. Request Booklet #72 for details.

In Canada:
Hugh Williams & Co.
47 Colborn Street
Toronto, Ontario



Gentsch Warp Leasing Machine

Automatically puts an "end-and-end" lease in warps at the rate of 12,000 ends per hour. Requires only a few minutes to load and unload. Request Booklet #12 for details.

Arrangements have been completed to manufacture parts for Uster equipment in the United States, should this become necessary.

USTER

USTER CORPORATION, CHARLOTTE, N. C.

80 Boylston Street, Boston 16, Mass.

look what GOSSETT is now doing!

CONVERTING 10" and 12" COMBER, CARD and DRAWING FRAME COILERS TO 14" or 15" SIZE

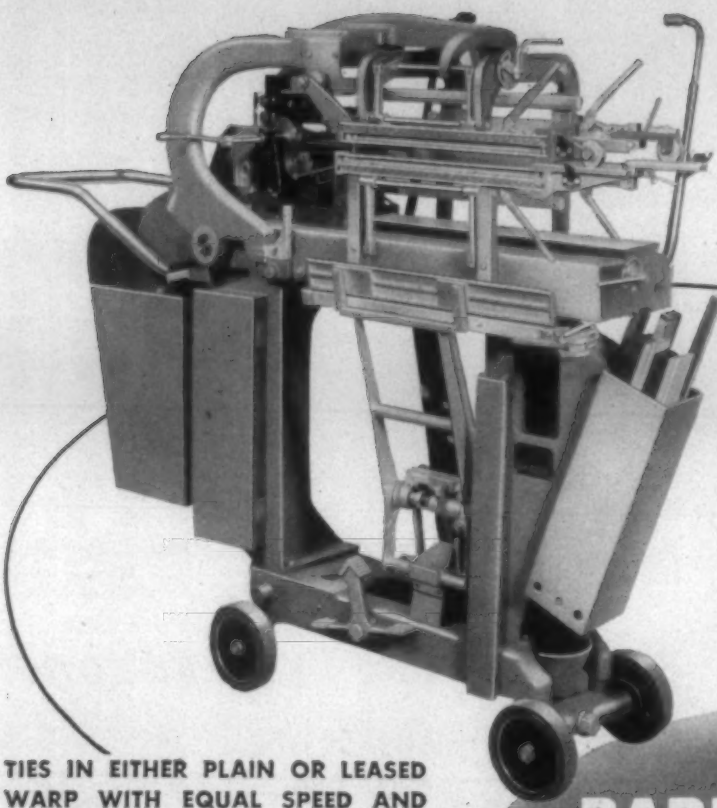
After many months of research and testing, GOSSETT technicians solved the problem . . . how to convert 10" and 12" comber, card and drawing frame coilers to a 14" or 15" size and do it at an amazing low cost.

What's more . . . this startling innovation has proven its worth. The first coilers which we converted to a 14" size are now in a number of leading Southern textile mills where substantial increases are being shown.

write or wire for full particulars and estimated cost

B. W. GOSSETT, President — E. C. MASON, Sales Manager
D. W. SMITH, N. C.-Va. Representative

GOSSETT MACHINE WORKS, INC.
GASTONIA, NORTH CAROLINA



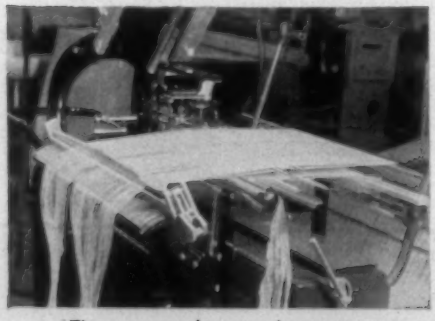
BARBER COLMAN

Reduce Costs!
Increase Production!
Improve Products!

TIES IN EITHER PLAIN OR LEASED WARP WITH EQUAL SPEED AND EFFICIENCY

BARBER-COLMAN *Portable* WARP TYING MACHINE

Model "LL" machine set up for tying in a plain cotton warp.



The same machine as above, now set up for a leased cotton warp.

A Barber-Colman PORTABLE Warp Tying Machine can be a *very profitable* investment for you. This machine offers a fast and accurate means for tying-in new warp *at the loom.* It can be handled in confined and hard-to-reach places and in loom alleys as narrow as 12". Overall production capacity averages 3500 to 4500 ends per hour, higher on high sley warps. Models are available to handle cotton, wool, worsted, silk, or synthetics (including monofilaments) and plain warps or leased warps or both. Tying is accurate and uniform and so much more efficient than common hand methods that the machine will pay for itself quickly in cost savings *even when not in constant use.*

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

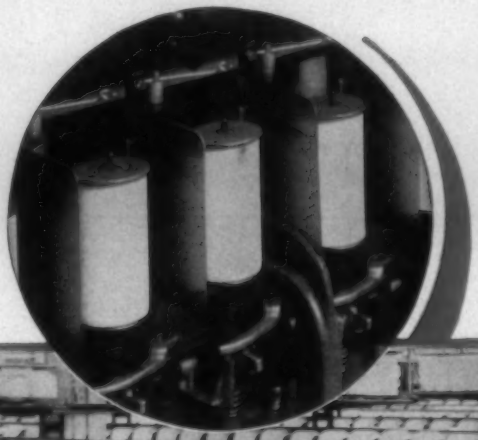
ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND MUNICH, GERMANY

Marquette ROLLER BEARING SPINDLES

with FULL-FLOATING FOOTSTEP BEARING

For Cotton, Rayon, Nylon, Wool, Worsted



In 1945 this nylon throwing mill put in a test frame of Marquette Roller Bearing Spindles. Since that time, they have purchased 38,000 for new frames and as replacements.

The mill's records show that Marquette Throwing Spindles have several distinct advantages. They produce yarn of highest quality. Large packages can be run at high speeds, with low power consumption and reduced maintenance costs.

We'll be glad to prove the advantages of operating Marquette Roller Bearing Spindles in your mill. For a test installation, contact our home office or one of our representatives.

PROTECTED BY U. S. AND FOREIGN PATENTS, AND PATENTS PENDING

The Marquette
METAL PRODUCTS COMPANY
CLEVELAND 10, OHIO
SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Representatives:
BYRD MILLER, WOODSIDE BLDG., GREENVILLE, S. C.
C. H. WHITE, 412 W. BESSEMER ST., GREENSBORO, N. C.
WILLIAM P. RUSSELL, BOX 778, ATLANTA, GEORGIA
JOHN J. MALLISSY, 58 LIVINGSTON AVE., LOWELL, MASS.

Also Manufacturers of: HYDRAULIC GOVERNORS • FUEL OIL PUMPS • FUEL OIL INJECTORS
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSSES • PRECISION PARTS AND ASSEMBLIES

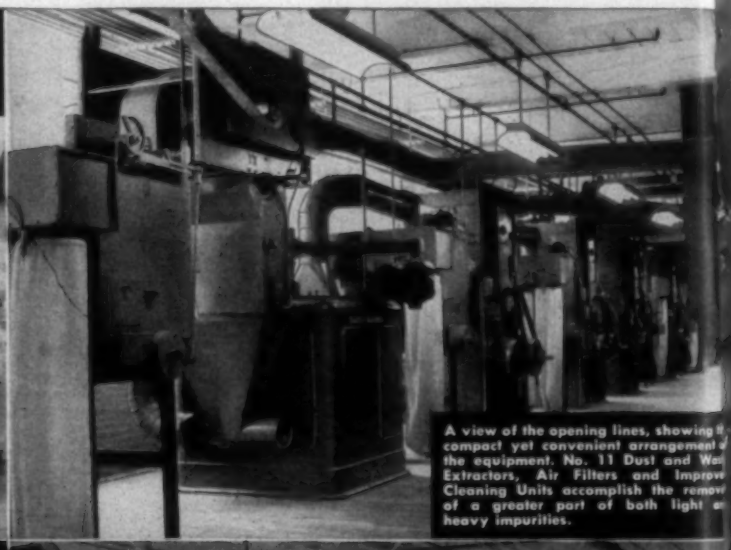
STRAIGHT-LINE OPENING AN

HERE IN THIS FAMOUS NEW ENGLAND MILL IS AN INSTALLATION OF OUTSTANDING MERIT

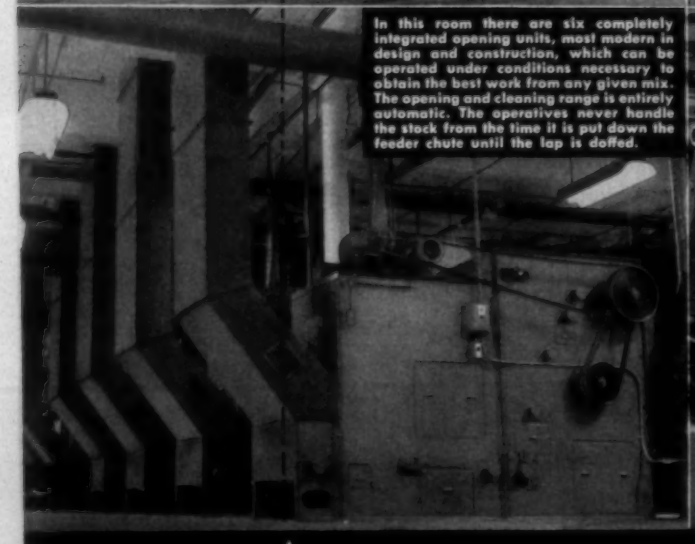
The standard SACO-LOWELL units are arranged in a compact, straight-line production assembly which provides controlled **uniform flow** of the stock. This scientifically planned installation operates with economy of man-power, high machine efficiency, and produces laps of excellent qualities.

The CONTROLLED PROCESSING secures for the mill a high recovery of unbroken and undamaged fibers, thorough cleaning, even laps, and good running work in the carding and spinning rooms.

This large, well lighted and conveniently located blending room is directly over the opening room. There is ample floor space to lay down the large lots necessary to obtain completely uniform stocks from different lots of cotton.



A view of the opening lines, showing the compact yet convenient arrangement of the equipment. No. 11 Dust and Waste Extractors, Air Filters and Improved Cleaning Units accomplish the removal of a greater part of both light and heavy impurities.



In this room there are six completely integrated opening units, most modern in design and construction, which can be operated under conditions necessary to obtain the best work from any given mix. The opening and cleaning range is entirely automatic. The operatives never handle the stock from the time it is put down the feeder chute until the lap is doffed.

A look into the picker room, showing the 12 Model F-4 Saco-Lowell Pickers, with Blending Reserves and Air Filters. Here you are looking at one of the newest and most efficient picker rooms in operation today.

SACO-LOWELL

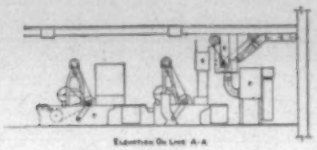
60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD, MAINE *and* SANFORD, N. C

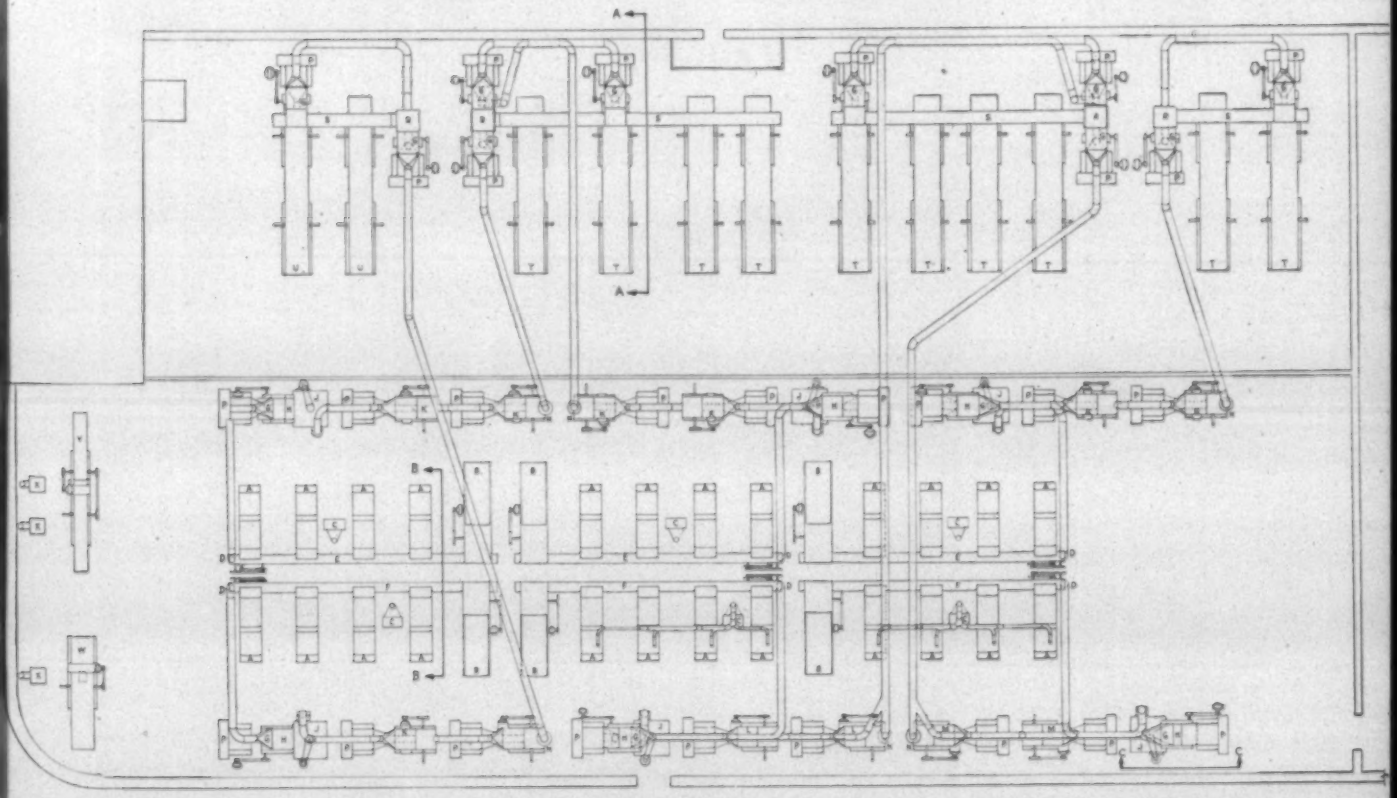
ICKING AT BATES IN LEWISTON, MAINE

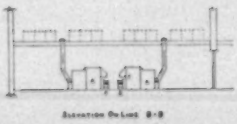
With **cotton** and **operating costs** at the 1951 level, in many cases important savings can be made by improving the layout and equipment in Opening and Picking.

SYM		
A	24	NO. 7 FEEDERS WITH MOTORS & FANS - 12 WITH COMBS & 12 WITH COMBING ROLLS
B	6	43" FS WASTE FEEDERS
C	6	NO. 7 TWO BAG FILTERS
D	6	ERIEZ MAGNETS
E	3	36'-0" MIXING FEED TABLES
F	3	35'-8" MIXING FEED TABLES
G	16	NO. 11 CONDENSERS
H	6	G.I. CHUTES FROM NO. 11 COND. TO V.O.-E WITH BY-PASSES
J	6	VERTICAL OPENERS
K	7	NO. 12-S LATTICE OPENERS WITH NO. 11 CONDENSER FEEDS
L	3	NO. 12 LATTICE OPENERS WITH NO. 11 CONDENSER FEEDS
M	2	NO. 12 LATTICE OPENERS WITH NO. 11 CONDENSER FEEDS
N	6	ADJUSTABLE CONE MOUTHS
P	28	NO. 6 AUTO. AIR FILTERS
R	4	NO. 2 OVER-FLOW RESERVE BOXES
S	4	NO. 2 AUTO. CONTROL FEEDING SYSTEMS
T	10	MODEL F-4 45" ONE PROCESS PICKERS
U	2	MODEL F-4 40" ONE PROCESS PICKERS
V	1	TWO SECTION W-3 WASTE MACHINE
W	1	45" FINISHER PICKER
X	3	NO. 34 AIR FILTERS

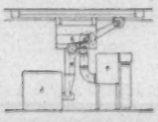


ELEVATION ON LINE A-A





ELEVATION ON LINE B-B



ELEVATION ON LINE C-C

Those mills which have not improved their opening and picking within the last few years will find it worth while to have our engineers survey their installations, to determine what savings can be made by straight-line, controlled processing, and modern equipment.

IT'S ALWAYS WISE TO SACO-LOWELL IZ

SALES OFFICES: CHARLOTTE • GREENVILLE • ATLANT

textile bulletin

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Callous To War

It is possible that, having witnessed two wars during a period of slightly over 30 years, the American people have grown callous to war.

It is possible that, having realized much fear several times during each war and yet seen each reach a successful conclusion, the American people have come to believe that there is no need to worry and that a successful end to the present conflict can be depended upon.

We do know that more than 100,000 American boys are fighting in Korea under distressing conditions, including sub-zero weather, and that each day many are being killed or wounded by enemy guns and explosives.

While they are fighting for us, under conditions which are probably worse than any which occurred in either World War I or World War II, the American people are living their lives "as usual" and seem to have faith that all will be well in the end.

They have seen two wars reach successful conclusions and seem determined not to be the victims of fears this time.

It seems to us that the American people are living their lives "as usual" without paying much heed to the cries of the thousands of young men whose blood is covering the frozen fields and mountains of Korea.

It is not unusual to hear some unthinking person assert that "we should not have gone into Korea anyhow."

Suppose the U. N. had refused to go to the aid of the South Koreans when North Korea crossed the parallel.

The refusal to resist aggression would have marked the end of the United Nations.

Had North Korea been permitted to take South Korea, Rumania and Bulgaria would probably have immediately invaded Yugoslavia.

Had there been no resistance to that invasion, the quick conquest of France and Italy would have followed.

Ultimately every country in Europe, including England, would have been overrun and within a short time all the countries in Africa and South America would have been the victims of invasion.

Had we refused to resist aggression anywhere and did we allow the forces of Communism to capture one country after another the day would certainly come when the United States stood alone against immense Communist armies which had invaded Canada and Mexico.

Had we stepped out of the path of the aggressor in Korea, we would eventually have had to look across the borders of Mexico and Canada at millions of Communist-dominated troops and eventually gone down in defeat and had our priceless possession of liberty taken away from us.

Our defense of Korea is costing us a terrible price in American blood but it was better to fight there than to have eventually be the sole surviving free country and have to fight a losing battle for everything which we hold dear.

Maybe the American people only appear to be callous and unalarmed over the situation which confronts us and maybe they will soon become aware of the fact that the United States faces the most critical situation in its history.

We Recognize Spain

Spain is the one country in Europe which has stood four-square against the Communists and for that reason it acquired the bitter hatred of the Communists and near-Communists in the United States.

So great has been the influence of American Reds and "pinks" that until now, they have been able to prevent our recognition of the Spanish Government; but we have finally extended recognition and are returning a United States ambassador to Spain.

About 1935 a group of Russian Communists infiltrated Spain and with the aid of Spanish Communists overthrew the government and took complete charge of the affairs of that country, although only a small portion of the Spanish people were inclined towards Communism.

An uprising of the Spanish people began in Morocco under Francisco Franco and, growing rapidly in strength because it represented an overwhelming majority of the people of Spain, swept over the Mediterranean and finally after much bitter fighting drove the Communists out of Spain.

When the situation became too hot, the Russian Communists pulled out of Spain but took with them all of the gold in the Spanish treasury. When they returned to Russia, they posed for pictures with the Spanish gold and we have seen those pictures.

When the Russians left Spain, American Communists and near-Communists took over the support of the Spanish Communists in a vain effort to prevent their being driven out of that country.

One of the leaders in the American effort to aid the Spanish Communists was ex-United States Senator Frank P. Graham, then president of the University of North Carolina.

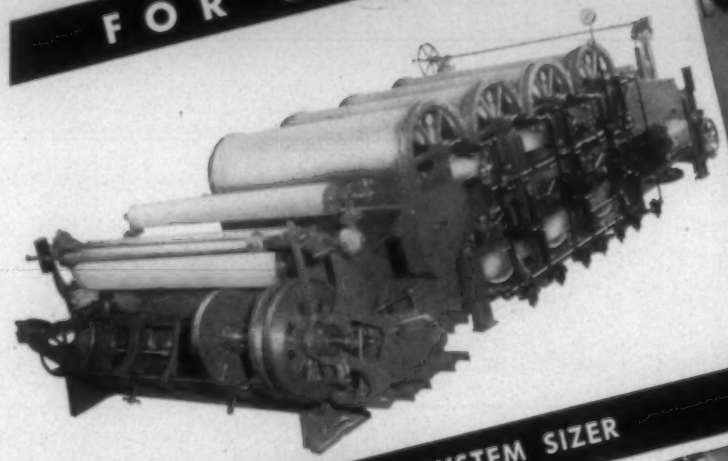
He raised money for their support, contributed some of his own money, used his influence to send American boys to join the Spanish Communists and took the lead in an effort to have the embargo against arms removed so that they could be sent to Spain.

We make this statement with the knowledge that it is absolutely true and that it cannot be successfully refuted.

In spite of the assistance rendered by American Com-

Johnson WARP SIZERS

FOR EVERY SLASHING NEED—



SEVEN CYLINDER SILK SYSTEM SIZER

SEVEN CYLINDER SIZER

NINE CYLINDER SIZER

AMERICAN ENKA CORP.

For sizing viscose, acetate,
cupra ammonium and spun rayon, cotton, nylon
and other synthetic yarns.

Charles B. Johnson

PATERSON NEW JERSEY

munists and near-Communists, the people of Spain under Generalissomo Francisco Franco drove out the Communists and since then have stood fast against Russia and Communism.

Many in America, who prated about the right of free peoples to choose their own form of government, have been vicious critics of the Spanish people because they refused to accept Communism.

It is probably true that both Hitler and Mussolini, prior to World War II, rendered some assistance to Franco in driving out the Russian Communists who had infiltrated Spain and overthrown its government, but there is not the slightest evidence that Franco gave any assistance whatever to Hitler or Mussolini during World War II.

Because the Spanish people under Franco drove the Russian Communists out of Spain, they incurred the bitter hatred of American Communists and near-Communists.

We have sent millions of dollars to France and Italy which have embraced Communism to a large extent, and to England where Communism is a powerful factor, but we refused to recognize Spain which was the one European country which has persistently stood four-square against Communism.

We have finally overthrown the influence of American Communists and sent a United States ambassador to Spain.

TEXTILE INDUSTRY SCHEDULE

— 1951 —

Feb. 3—PIEDMONT SECTION, A.A.T.C.C., Greenville, S. C.

Feb. 7-9—COTTON RESEARCH CLINIC, Carolina Hotel, Pinehurst, N. C.

Feb. 24—SOUTHEASTERN SECTION, A.A.T.C.C., Talladega, Ala.

March 5-9—Spring meeting and committee week, A.S.T.M., Cincinnati, O.

March 29-31—Annual convention, AMERICAN COTTON MANUFACTURERS INSTITUTE, Greenbrier Hotel, White Sulphur Springs, W. Va.

April 3-4—TEXTILE DIVISION, AMERICAN SOCIETY OF MECHANICAL ENGINEERS, Atlanta, Ga.

April 12-14—Annual convention, ALABAMA COTTON MANUFACTURERS ASSOCIATION, Hotel Buena Vista, Biloxi, Miss.

April 21—PIEDMONT SECTION, A.A.T.C.C., Raleigh, N. C.

April 23-27—WET PROCESSING EXPOSITION, 71st Regiment Armory, New York City.

April 30-May 4—MATERIALS HANDLING EXPOSITION, International Amphitheatre, Chicago, Ill.

May 5—SOUTHEASTERN SECTION, A.A.T.C.C., Atlanta, Ga.

May 16-18—Annual convention, COTTON MANUFACTURERS ASSOCIATION OF GEORGIA, Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla.

May 16-18—NORTH CAROLINA STATEWIDE INDUSTRIAL SAFETY CONFERENCE, Robert E. Lee Hotel, Winston-Salem.

May 17-19—Annual outing, CAROLINA YARN ASSOCIATION, Carolina Inn, Pinehurst, N. C.

June 15-16—Annual outing, SOUTHEASTERN SECTION, A.A.T.C.C.

June 18-22—Annual meeting, AMERICAN SOCIETY FOR TESTING MATERIALS, Atlantic City, N. J.

June 21-23—Annual convention, SOUTHERN TEXTILE ASSOCIATION, Mayview Manor, Blowing Rock, N. C.

June 29-30—Summer outing, PIEDMONT SECTION, A.A.T.C.C., Myrtle Beach, S. C.

Sept. 8—SOUTHEASTERN SECTION, A.A.T.C.C., Columbus, Ga.

Sept. 22—PIEDMONT SECTION, A.A.T.C.C., Charlotte, N. C.

Oct. 4-5—Annual convention, CARDED YARN ASSOCIATION, Carolina Inn, Pinehurst, N. C.

Oct. 17-19—Annual national convention, AMERICAN ASSOCIATION OF TEXTILE CHEMISTS & COLORISTS, Statler Hotel, New York City.

Nov. 8-9—Annual meeting, TEXTILE RESEARCH INSTITUTE, New York City.

Dec. 8—SOUTHEASTERN SECTION, A.A.T.C.C., LaGrange, Ga.

—1952—

March 3-7—Spring meeting and committee week, A.S.T.M., Cleveland, O.

June 23-27—Annual meeting, A.S.T.M., New York City.

Nov. 6-8—Annual national convention, A.A.T.C.C., Boston, Mass.

— 1953 —

September—Annual national convention, A.A.T.C.C., Chicago, Ill.

— 1954 —

April 26-May 1—AMERICAN TEXTILE MACHINERY EXHIBITION, Atlantic City (N. J.) Auditorium.

Almost Unbelievable

The *Washington* (D. C.) *Daily News* says that after David Hume, music critic for the *Washington Post,* had written that Margaret Truman's singing was flat most of the time, he received a letter from President Harry S. Truman which read as follows:

I have just read your lousy review buried in the back pages. You sound like a frustrated old man who never made a success, an eight-ulcer man on a four-ulcer job, and all four ulcers working.

I never met you, but if I do you'll need a new nose and plenty of beefsteak and perhaps a supporter below.

Westbrook Pegler, a guttersnipe, is a gentleman compared to you. You can take that as more of an insult than as a reflection on your ancestry.

It is almost unbelievable that a President of the United States would stoop to write a letter of that kind simply because a music critic said that his daughter's voice was flat.

President Truman must not have been in his right mind when that letter was written, which could easily be so, if reports which have been current for some time are correct.

A Report From Washington

The following are extracts from a letter from a well informed and patriotic citizen of Washington, D. C.:

Foggy Washington is in the bluest funk I have ever seen it; never has the estimate of Truman seemed to sink so low, and never has Congress seemed so critical of a timid leadership which does not lead, does not deal effectively with inflation, and spreads only confusion and disorder in industrial mobilization, and drifts in handling a rearmament program.

The whole Truman regime has suddenly become bankrupt; Truman can look at things only from a political slant, and he evidently doesn't know what to do. The U.N. is apparently calling all the shots, while our soldiers are doing all of the fighting.

I suppose it all looks very bad to you down there, but that is only about half as bad as it actually is. It is positively the damnedest mess I have ever looked at, and at the Capitol I have heard it called "a hell of a mess" no less than a hundred times this week.

We are stuck with Truman, the most incompetent, thick skulled, stupid, bullet headed and hopeless moron we have had in 175 years.

Under ordinary circumstances we would not publish such statements but the situation is so critical and the danger so great that we feel that citizens should be given as accurate a picture as possible.

Telephone Numbers Of Mills

As a convenience to salesmen we have for a number of years been placing the local telephone number after the name of each mill, as listed in both the Pocket Edition and the Office Edition of *Clark's Directory of Southern Textile Mills.*

Prior to the publication of each issue of a directory we send a blank to each textile plant and on the blank is pasted its data as shown in the last issue with the request that they make the necessary corrections, sign and return.

The blanks come back to us with the signature of a mill

official but we have found that some overlook changes which have been made in their telephone numbers.

Salesmen discover the errors when telephoning mills and we will appreciate their noting the changes and advising us on a postal card.

Placing mill telephone numbers in *Clark's Directory of Southern Textile Mills* is a service which has been appreciated by salesmen and they can help us enter the correct number when they discover changes.

Remember The Foundations

The North Carolina Textile Foundation, Inc., was organized in December, 1942, as a means of giving support to the School of Textiles at North Carolina State College.

It was followed by the J. E. Sirrine Textile Foundation, Inc., for the support of the School of Textiles at Clemson College and the Textile Education Foundation of Georgia for the support of the A. French Textile School at Georgia Institute of Technology, Atlanta.

While excess profits taxes were in existence mills and machinery and supply dealers made very liberal donations and the North Carolina Textile Foundation acquired $1,200,000.

We do not have very recent figures but understand that more than $900,000 was contributed to the J. E. Sirrine Textile Foundation and in excess of $550,000 to the Textile Education Foundation of Georgia but both of the figures may be too low. We do know that during 1950 the mills of South Carolina raised $150,000 for new textile equipment to be installed in the School of Textiles at Clemson College.

Excess profit taxes are with us again and we sincerely hope that the textile mills in each state will make liberal donations to the foundation which supports its school of textiles.

Textile manufacturing is becoming more and more complicated by reason of a constantly increased number of synthetic fibers and if we are to have a successful textile industry we will need the services of well-educated textile school graduates. Money donated to any of the three foundations will bring excellent returns in the years to come.

Strong school of textiles at N. C. State College, Clemson College and Georgia Tech will mean much to the textile industry of the South.

A New Year's Prayer

Thou who art the source of life and all its blessings, fervently we invoke Thy blessing upon our country and our nations. Guard them from calamity and injury; suffer not their adversaries to triumph over them but let the glories of a just, righteous and God-fearing people increase from age to age. Enlighten with Thy wisdom and sustain with Thy power those entrusted with our safety and the guardianship of our rights and liberties.

O God, from everlasting to everlasting. We, Thy children, stand on the threshold of a new year. Give us to understand the eternal historic truth that time is ever on the side of the optimists, that delusion triumphs but for a day, but righteousness from generation to generation.

O Lord, we pray for strength. Strength—to examine our own lives with impartial search for the truth; strength—to make our suffering a discipline for ourselves; strength—to find the moral power and the courage to endure bravely and to turn the struggle and the suffering and the sacrifice into inspiration and sanctification.

O Lord, grant us peace, Thy most precious gift—a peace based on honor and justice. Enable our land to be its messenger unto the peoples of the earth. Bless our country that it may be a stronghold of peace and its advocate in the council of nations. Strengthen the bonds of friendship and fellowship among the inhabitants of all lands.

Teach us to live in concord with our fellow man, and thus to prove that we are united in Thee. In Thy sight, all man-made distinctions vanish—the wise and the simple, the successful and the unfortunate all partake of Thy paternal beneficence. Our fraternal strife is a denial of Thy Fatherhood. The task to build a better world is too great for each of us alone, but united, we can achieve it. The wind and the rain, the sun and the stars work together harmoniously. O that we, all of us, parents and children, toilers and planners, races and nations, would blend the voices of our hearts so that when we have silenced the shoutings of discord and quieted the murmurings of envy, Thy still voice may be heard speaking thru the voice of humanity: "Peace—peace to him that is near and to him that is far off." Amen.—Prayer delivered by Rabbi Philip Frankel at Charlotte (N. C.) Rotary Club Jan. 2, 1951.

Insect Damage To Cotton

It is estimated that, in the United States, insects destroyed $617,036,000 of cotton in 1949 and $598,565,000 in 1950 or a total of over $1,200,000,000 in two years.

The boll weevil, bollworm, leafworm, pink bollworm and other pests reduced the total yield 16.5 per cent—more than 2½ million bales and more than four million tons of cottonseed.

The advance in the price of cotton as the result of insect damage has caused advances in the price of cotton goods and the users of goods have had to pay much higher prices.

It may be that agricultural scientists have done all possible in trying to discover methods of controlling insects which damage cotton, but the staggering estimates of insect damage in 1949 and 1950 should spur them to greater efforts.

Cotton In Wartime

The following is a record of the movement of the price of cotton in the Civil War, Spanish-American War and World War I.

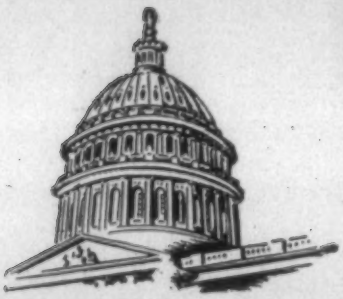
	Cotton Prices
CIVIL WAR (1861-1865)	
At beginning of war	10c
One year later	51c
Two years later	92c
Three years later	93c
Four years later	$1.90
SPANISH-AMERICAN WAR (1898)	
At beginning of war	6c
One year later	10¼c
WORLD WAR (1914-1918)	
At beginning of war	9c
One year later	12¾c
Two years later	27c
Three years later	36c
Four years later	38c

The Korean trouble began at a time when cotton was high because of government control and there is little evidence that it will follow the extreme pattern of other wars.

Wyllys Taylor With N. P. A.

The textile industry might well draw in its collective breath and let forth with a general sigh of satisfaction that Wyllys H. Taylor, formerly president of Newnan (Ga.) Cotton Mills, has joined the textile division of the National Production Authority at Washington. High executives of the N.P.A., in turn, should be thankful that they have secured the services of so capable, so experienced a mill man—one who knows the problems of the textile industry from every angle.

We wish Wyllys Taylor the best in his patriotic effort, and trust that he will be able to look squarely and philosophically at the inevitable red tape. Details of textile industry mobilization for the war effort could not be in better hands.



WATCHING WASHINGTON

[Exclusive and Timely News from the Nation's Capital]

Wage and price control powers, to be used simultaneously, will not expire on June 30, as now provided by law, and fondly hoped for by union leaders resisting wage controls. Indication is the law will be extended, probably for two years, but changes made to allow general controls and ceilings to be invoked all along the line. Congress is impatient of "gradual" stabilization, toward which the Administration has slowly moved under "permissive" powers granted by the law.

In setting up controls for two years, it is possible a provision will be made for continuance in the second year by Truman certifying "a finding of necessity" to that effect. This would be without change in substance or mode of application. Thus, Truman could continue the controls for a second year without necessarily seeking action by Congress.

In new grants, it is quite certain blanket powers for "the duration of mobilization" will not be given to Truman, as was the case in War II. Congress is disposed to re-examine these powers at fixed intervals, probably at the end of two years. Truman is opposed to this provision.

An early show-down will come on the issue of all-out mobilization, as compared with the limited or gradual plan Truman is following. Congress wants full conversion to armament production; Truman is not going along on this concept, or taking leaders in Congress into his confidence as to what plan he is following. The net result may be Congress moving to force Truman to move faster, and go further, than he seems to want to do.

Mobilization Director Wilson is determined on a dual "freeze" of wages and prices as soon as a suitable plan can be devised. On this point he is clashing with Truman Aide Steelman, who told the unions a wage "freeze" is not needed, and wage changes should be tied to a cost-of-living index. Wilson indicates he will have nothing to do with the Steelman substitute.

Truman has not impressed Congress that he is moving directly to check inflation inherent in armament spending. He has not indicated the balance he is using to control credit and lending, and how far new and higher taxes will be used as a brake. Neither of these devices is looked upon with satisfaction in Congress; more insistence on wage and price controls will mount rapidly in both houses.

Gearing wage controls to a cost-of-living index, as both

Truman and the union leaders want, throws the whole load on price controls. Congress believes this formula will ultimately defeat price controls; it scraps the dual control provision put into the law during passage.

Sentiment is hardening in the House and Senate to refuse further tax increases until non-essential spending is cut to an irreducible minimum. While Truman is talking "economy" for next year, evidence points to the design to continue non-military and unessential spending at about the 1948 level. A flood of items, roughly called "vote catchers," is being written into the proposed budget.

If the determination to wring water from Truman's spending holds fast there will be no more tax legislation before Summer or next Fall. This would be beyond the time for adoption of next year's budget, and give Congress a clear idea of how unessential spending and usual waste is to be reduced.

Russia on Jan. 1 launched full-scale production of atomic bombs in four plants. These now complete plants have been building for three years and are fashioned on data passed along by Communists in this country or England with access to, or working on, atomic bomb secrets. Location of the four plants is well known to our military officials.

Truman military leaders say evacuation of Korea is "according to plan," but Congress suspects it's Moscow's plan. Truman's bold pronouncement in June was not carried through, either in Korea or Formosa. MacArthur was forbidden to bomb enemy bases, and the Seventh Fleet stood between Chinese Reds and invasion by Chiang.

Senator Taft in his momentous speech on foreign policy differed with Truman as to method rather than in objectives. It was not isolationist or partisan in tone, but rather a discussion of the world situation on a high plane. Taft wants defense here to have first attention, but does not urge abandoning the rest of the world to get it.

Taft challenged Truman's authority to send a large army to Europe without the consent of Congress, especially when there's no actual war with Russia. He opposed any advance promise to put a large army in Europe. On this point Senate Fair Dealers quickly challenged him, and said Truman does have power to send troops wherever "necessary to protect interests of the country."

Truman leadership in this Congress has declined to the thinnest margin of influence. Controversial Fair Deal proposals are on ice for the duration. The rule jammed through the House by Truman mandate at the start of the 81st Congress depriving the Rules Committee of its powers, has been rescinded, 244 to 179. That is just about the measure of Truman's strength in the House of Representatives.

In word and gesture at least, Truman is not abandoning his Fair Deal and 20-odd ""campaign promises" on which there has been

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no action. But they are on the shelf. He may use them as domestic issues in 1952, but they have no relation to the legislative program of this Congress.

Truman is feeling pressure of the temper of this Congress, which points to many changes this year. Marshall Plan aid will decline, and it could vanish; $20 billion poured into Europe did not win a single friend that would stick in a crisis. The idea of a world underwritten with gifts of dollars is rapidly declining.

Revision of the military draft law will probably provide for calling youths of 18 years into service, with 27 to 30 months as the length of service. It is possible the age limit may be lifted to 28 for single men and married men without children. Deferment rules will be tighter, with only an actual physical handicap as a bar to service induction.

Recent speeches of Herbert Hoover and Taft on foreign policy are drawing loads of mail to House and Senate members from over the country. While Truman leaders call the speeches "isolationist," the flood of letters from home is forcing Congressional attention to them.

Cold war with Russia at least becomes warm under Truman's declaration of national emergency, setting on foot a war program rather than one of rearmament. The declaration does not change very much the pattern on which industry has been running, but it opens wide the door to a long and hard pull, with more austerity, higher taxes, manpower restrictions and more shortages in civilian goods.

Full force of the change in restrictions, shortages and a controlled economy, may not be fully felt for months. But the road ahead is lighted. Mobilization will not be a sudden, hurried change from measured rearmament. The process will be gradual, step by step, until at least 40 per cent of the country's industrial production is going for rearmament purposes.

Common practice of officials in regulatory agencies going into lush jobs in industries they have been regulating is under investigation by the House Judiciary Committee. A pending bill would outlaw it. Committee members say "big shots" commonly "learn the ropes," and then jump into jobs up to $75,000 in concerns they have been regulating for the government.

Truman struck by far the most conciliatory note in addressing Congress that has come from him in more than five years. He did little to win Southern Democrats, who are firmly in control.

Southern Democrats are not changing their position on the home political front, said Governor Wright of Mississippi, in Washington Jan. 5. "Our position is well known; it has not changed," he said. "We were not for Truman in '48, and we will not be for him in '52. We are unequivocally against leftist doctrines, whether thrust upon us from within the Democratic Party or from any other source."

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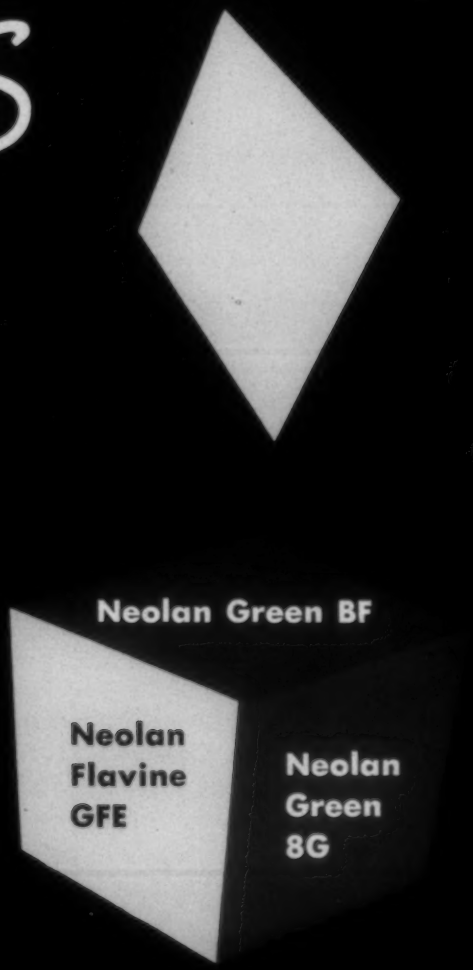
These newest additions to the Ciba Neolan Family have been developed to brighten the range of greens and yellows heretofore available.

In the Neolan-best-for-wool tradition, these new colors dye fast and level, are simple to apply, and are easy to shade.

Also, these Neolan greens are exceptionally stable to prolonged boiling.

Data on dyeing procedures, dyed samples and complete tables of properties are now ready.



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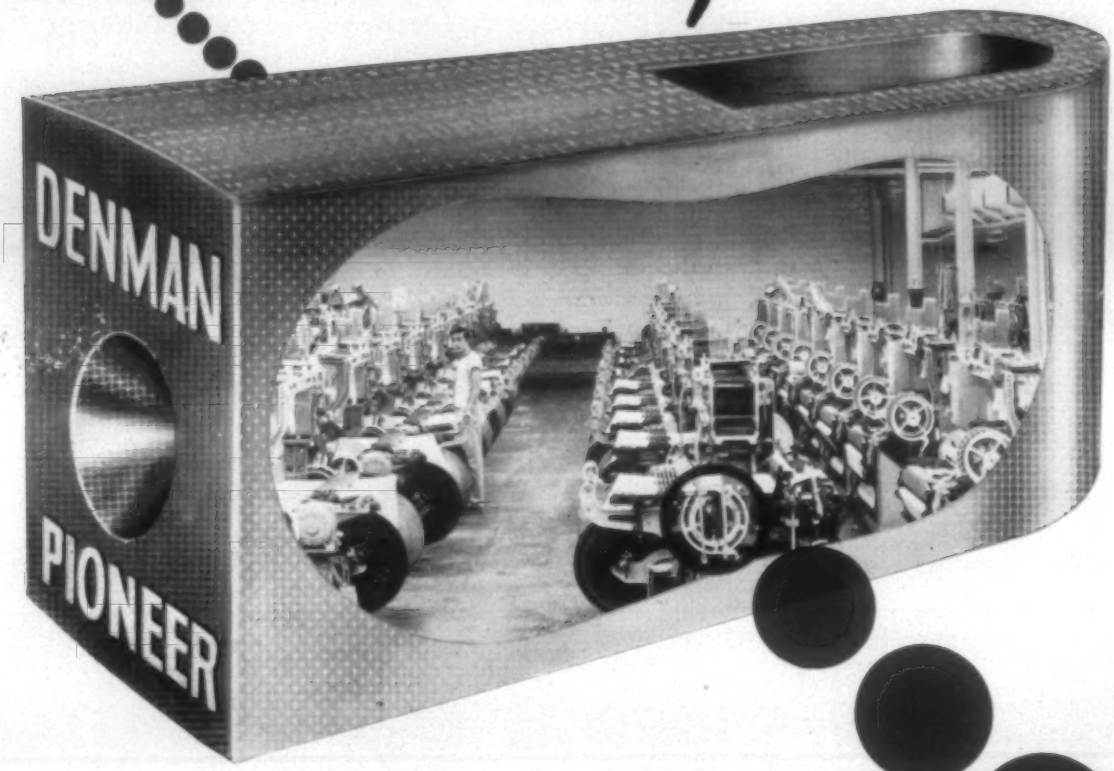

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textile bulletin

VOL. 77 JANUARY, 1951 NO. 1

TEXTILE RESEARCH ACHIEVEMENTS, 1950

By JULIUS B. GOLDBERG, Research Director, J. P. Stevens & Co., Inc.

AS I HAVE said in previous years, those of use who are close to the development of fibers, fabrics and finishes as well as research in textile manufacturing equipment are often likely to approach a new year with the feeling that comparatively little has been accomplished by the scientists and practical mill men during the past year to improve textile products and manufacturing techniques. But a review of what has been reported in the literature, making due allowances for the sometimes over-enthusiastic advertising claims, reveals a reasonable number of worthwhile achievements to justify a feeling of pride in being associated with a fascinating, frustrating and frequently fruitful business. While this summary is based on items that have come to my attention in reading over 1,500 issues of textile trade papers and magazines published in this country and abroad during 1950, it is not to be regarded as a complete digest of everything new in textiles.

Fibers and Yarns

Man-Made Fibers—As contrasted with the natural fibers, the consumption of which still accounts for over 75 per cent of the total used in apparel fabrics in the United States, I recently referred to the man-made or synthetic fibers as the "supernatural" fibers. Admittedly, they are not yet all equal or superior to those rather dirty, greasy and gummy products of farm and field, but I am sure that they will some day achieve that distinction. The magnitude of the inroads to be made on the consumption of the natural fibers will depend greatly, of course, on the economic factors which none of us can predict.

Anticipating the advent of other acrylonitrile base fibers, early in the year Du Pont called attention to the fact that Orlon is a *brand* of acrylic yarn and a few months later Chemstrand Corp. announced plans to build a plant for full-scale production of a new acrylic fiber currently being made in limited amounts. Reports appeared of the development of another textile fiber of this type by Allied Chemical and Dye Corp. and it was rumored that a new Celanese experimental yarn of unknown composition was being tried out in knitgoods. Fiber V, Du Pont's version of the Imperial Chemical Industries' Terylene, stepped out of the experimental stage with the announcement that a plant would be built in 1951 for the manufacture of this new synthetic fiber. While not strictly born in 1950, mention should be made of the technological progress made in Carbide and Carbon's staple, Dynel, and Virginia-Carolina Chemical Corp.'s corn protein fiber, Vicara, both of which are now being accepted for their particular merits in certain textile materials. Even the animal kingdom experienced some intermural competition when it was said that Caslen, an improved coarse-denier casein fiber, was finding acceptance in mattresses in place of horse hair. Recently, one of our English friends, in discussing man-made protein fibers, such as Vicara and the English Ardil peanut protein fiber, said "You can't have your suit and eat it," and indicated that in his opinion the day may not be too far off when the conversion of potential foodstuffs into fibers will not be countenanced in a hungry world.

The viscose process yarns, too, can claim some of the limelight of research along with the true synthetics. Retrogressing both chronologically and alphabetically we come to Du Pont's Fiber E which we recall as having been introduced originally a number of years ago as a very high-tenacity low-elongation yarn. In November it was reported that a newer version is characterized by a high shrinkage when subjected to a caustic treatment, particularly effective in giving a high degree of cover when used in plush constructions.

Of special interest to the carpet industry, which has been forced by high wool prices to turn to more active development of rugs and carpets containing varying amounts of man-made fibers, was the introduction by American Viscose of Avisco 15, a 15-denier dull crimped staple. Acetate and nylon fibers too, have been in use in carpet blends for some time. For those who would like to impart their own mechanical crimp to nylon staple or tow, Turbo Machine Co. offered a new machine to process up to 250 pounds per hour.

The patent literature indicated active interest in such widely diversified products as mixtures of viscose and acrylonitrile to make a water-soluble yarn, polyurethane and polycarbamide yarns, water-repellent regenerated cellulose, and improved nylon with superior heat-resistance and crimp.

Foreign developments, although apparently still not translated into large-scale production for export to this country, included Grilon, a Swiss nylon-like fiber, and German Perlon of several types said to be even superior to nylon in some characteristics. One Perlon type, caprolactam, was also scheduled to be made in Denmark under Swiss patents. Novatex staple was imported from Italy for carpet use and the German Saderit was described as an elastic, oil, alkali and rot and mildew-resistant sewing thread. From France

came reports of a new yarn called Rilsan derived from a material which brings back memories of an evil-tasting but most effective cure-all, castor oil. Perhaps that accounts for the yarn having unique physical properties. Other French fibers and yarns reported in the literature were Rhovyl and Thermovyl, polyvinyl chloride base materials suitable for novelty effects and applications. A Parisian professor, living up to the reputation of his countrymen for creating frilly fashions, was credited with the invention of viscose rayon staple with cross-scale formations similar to wool and accomplished by the use of a vibration apparatus in the spinning operation. A similar technique was tried experimentally in this country years ago.

An English journal reviewed the progress made in the development of yarns of cyanoethyl ethers of cellulose, distinguished by their unique ability to disappear or dissolve in water. Such a product made by the reaction between viscose and acrylonitrile was described in a patent issued to American Viscose Corp. While water-soluble rayon might be used for carrier or scaffolding threads as was suggested for the English-made alginate yarns when they were first introduced, it would appear that the current yarn situation does not justify employing a product which goes down the drain with water.

Vinylon, a Japanese polyvinyl alcohol fiber reputedly priced below nylon while possessing many of nylon's properties attracted some attention in the trade and according to a report made about a month ago, the Japanese have started to produce eight tons daily.

Created in the Shell Oil laboratories, a new low-cost Dutch fiber made from natural rubber and sulphur dioxide was claimed to have strength comparable with viscose, but with superior resistance to water and solvents. What were described as "wool-like" fibers were made in a German plant from lava basalt, but it is believed that they were more likely to resemble what we know as mineral "rock wool" rather than that product from the sheep's back. The Imperial Chemical Industries, Ltd., announced its intentions to produce 20 million pounds of Ardil and 11 million pounds of Terylene annually in two new plants. From Austria we learned of Plastylon, a yarn composed of glass and various waste fibers and suggested as practical for its strength and warmth.

Natural Fibers—For more even, lower cost silk yarn, a Japanese firm introduced a new automatic reeling machine. Revived interest in the spinning of yarn from regenerated real silk was disclosed in a report of a Textile Research Institute research worker on some of the theoretical aspects of this process. At the same time Japanese investigators claimed that they had made such a regenerated silk with a tenacity of about two grams per denier. A version of this type of yarn introduced here many years ago was quite weak and generally unsatisfactory. We were somewhat dismayed with the traitorous action of some members of the cosmetic industry—whom we always regarded as pioneers in depending on the artificial to improve the natural—when we read of their presentation of a lipstick and face powder containing *atomized* silk. If we wore them, we would raise our artificial eye-lashes at any attempt to explain the exact meaning of "atomized silk." The only way for the cosmetic people to make amends is to suggest the use of urea or melamine formaldehyde resins for making our skin wrinkle-resistant.

A most interesting development was the new Alexander Smith & Sons Carpet Co. Textralize process for imparting permanent crimp to carpet wools to improve spinnability and to provide better cover with the use of less wool. At the same time it was said that the wearing qualities of carpeting made with such extra crimped wool were also improved. Experimental work is being continued in applying the same treatment to wools for use in blankets, upholstery and apparel fabrics, and some trials have been made to impart a more durable crimp to viscose rayon staple by a similar operation.

A domestic rayon company obtained a patent on a process for improving the physical and chemical properties of wool by a chemical treatment, while a method for obtaining increased resistance to the deterioration of wool by heat was covered in a patent issued to the Albany Felt Co.

As further evidence of the relationship between food and clothing, only a few weeks ago it was proposed that the eating of mutton chops instead of lamb chops should be encouraged in the United States to force the wool grower to consider wool the principal product and meat as a by-product. If price is the determining factor, it looks like a close race between the cleavers and the weavers.

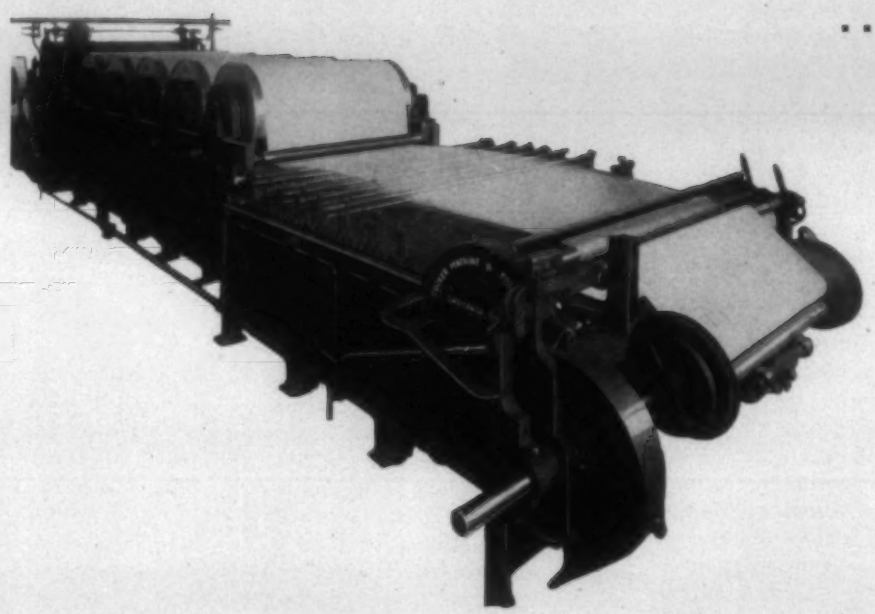
Although it is not likely to increase the consumption of bananas, experimental fibers resembling jute were produced from a Mexican banana plant and converted into yarns and bag fabrics. In these days of advertising virgin nylon and Orlon as well as virgin wool, it might be appropriate to inject a little sex into this review by calling attention to the fact that an English expert advocated the use of hormones to increase wool yields. A South American research worker, however, warned that increasing wool production by such means might cause sterility.

A news dispatch from Switzerland stated that a secret method has been devised for degumming ramie, yielding a soft, strong fiber which has been spun in fine yarn counts, and just a few months ago a Pittsburgh company claimed the fabrication of a new yarn from ramie.

Fiber and Yarn Processing

The Thornburg Machine Works Free Air cotton cleaner with a capacity of 1,600 pounds of cotton per hour, the Department of Agriculture modified cotton cleaning equipment and two new high-production combers were among the new research accomplishments in textile machinery during 1950. As a complementary unit to their comber, the Terrell Machine Co. announced a new lap-winder and an automatic can changer. The H & B four-roll Casablancas system featured extreme flexibility, permitting the handling of cotton, rayon and nylon in lengths up to three inches on one spinning frame with a wide drafting range. A new type of cotton picker by the Harris Foundry and Machine Co. was said to harvest over 90 per cent of open cotton and the Southern Regional Research Laboratory new cotton opener featured means for making it loftier without reducing fiber strength. An example of the proficiency of mill technical staffs was shown in the Collins and Aikman Universal drafting system which can process fibers up to nine inches in length and can spin medium-count worsted-like yarns on cotton carded yarn equipment. The American Viscose Corp. textile research department contributed two new devices during the past year. One was a self-contained unit for measuring and recording tensions on spinning frames, slashers and looms, using a recording strain gauge;

the Cocker 9-Cylinder High Speed Slasher



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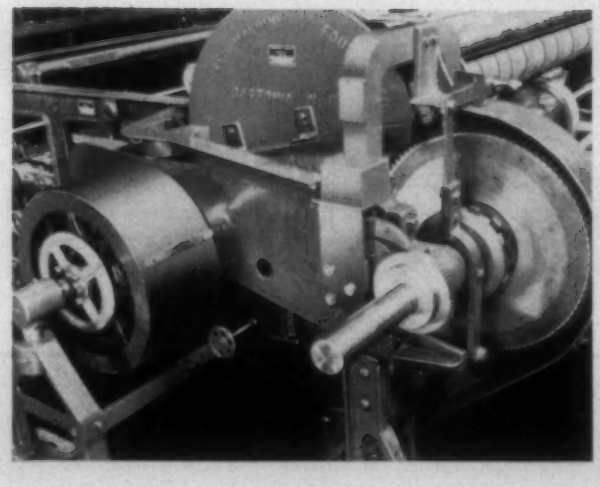

THE LEADER COCKER AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

the other was the Rotafil unit for measuring the evenness of low-twist filament yarns.

A number of new two-for-one twisters were publicized during the year, including those by Fletcher, Universal, and the Howe Machinery Co. in co-operation with the American Viscose Corp., the refined Swiss Parcofil, a French model designed by the inventor of the Fayolle-Ancet circular loom, and one developed by an Italian firm.

Whitin offered a new worsted ring twister, a number of wool spinning frame innovations, an new high-speed precision ring twister for all synthetic yarn twisting on large packages and an automatic bobbin-loader and delivery unit. A revolutionary type of spinning frame builder motion was announced by the Draper Corp., and a system to automatically retrieve wool noils during combing was accomplished by the Abington pneumatic device attached to a comber processing card sliver. For placing bobbins directly on pinboards, Abbott Machine Co. exhibited an automatic attachment equipped with an electric eye magazine creeling device. An electromagnetic drive for cake-winding promised to reduce waste by tugging at yarn tangles.

Marquette Metal Products Co. presented a new spindle and bracket with positive braking action for large package spinning and twisting. It was also reported that they were introducing the Spanish constant card vacuum device for preventing clogging on cotton cards and for eliminating the need for periodical stripping, thus increasing production. Progress in the manufacture of bonded fabrics was evident in the recent development of the new Curlator Corp. Buresh Rando-Feeder and Rando-Webber machines designed to produce one-half to eight-ounce webs in 40-inch widths at up to 35 pounds per hour.

While the Uster, Brush, Serc and Pacific yarn and roving evenness testers came into more popular use, the Yarn Checker, made by the Standard Electronics Research Corp. was a new portable automatic device for checking yarn count during spinning.

Slashing, Weaving and Knitting

The machinery show at Atlantic City attracted record crowds and the many exhibits testified to the real progress being made by the machinery manufacturers. One of the centers of attraction was the Universal Winding Co.'s Unifil loom winder, providing for the automatic winding of filling bobbins on the loom, dropping them into the loom and stripping them for re-use. Other Universal products exhibited were a new Auto-Coner drum winder with automatic transfer and knot-tying, pressure cleaning of tension and slub-catcher devices, and a Twister-Coner particularly suited for low-twist yarns. Also of interest at this popular show were the Crompton and Knowles S-6 automatic bobbin changing loom with electronic let-off for controlling warp tension, simplified center fork for the Draper X-2 loom, the 32-inch diameter overhead beam, the Draper-Diehl new loom drive, and the Hunt-Warner electric clutch and brake with push-button controls for Model E looms.

Small-scale slashers for the evaluation of warp sizing were described by the Monsanto Chemical Co. and the West Point Foundry and Machine Co., while the Lewellen Mfg. Co. offered a new slasher for holding speeds and tension constant.

Non-conventional weaving machines again received attention in the press with particular emphasis on improvements in the Warner & Swasey-Sulzer loom. Several worsted mills have expressed their enthusiasm for the improved model and a number of machines are scheduled for delivery before the end of this year.

Swing and sway may be popular on the dance floor but for mills which would eliminate the swaying of their weave rooms, engineers describe a means of cadence control which could be installed at a reasonable cost.

The chemist as well as the textile engineer has been active in his contributions to improve weaving, and several new warp sizing materials for spun nylon were developed. The perfect formula has not yet been produced and the newer synthetics are forcing the warp sizing experts to huddle closer to their test tubes.

Improvements were reported in several American-made tricot, circular and full-fashioned knitting machines as well as in equipment for pre-setting nylon hosiery. Also recently marketed was a machine for printing identification marks on the welt of nylon hosiery with claims made for high-speed, low-cost operation.

Foreign Machinery Developments

Other than the two-for-one twisters previously mentioned, our friends abroad reported a number of interesting developments in processing machinery. Early in the year there were rumors of an electronic device being developed in Canada to permit elimination of the picker stick looms. In Czechoslovakia a loom was designed with a gripper for carrying the filling yarn from a stationary bobbin through the shed, but not with enough force for details of the invention to penetrate the iron curtain. A novel French multi-sectional loom with centrifugal filling supply combined characteristics of circular and orthodox looms.

An interesting article described a Japanese direct spinning two-zone system said to be capable of yielding an 80s yarn from 3,000-denier tow with greater uniformity than was obtainable in single zone systems. Details disclosed of an improved French continental spinning system indicated that fibers of less than one inch and up to 10½ inches could be processed to produce level lofty yarns at low cost.

Inspired, perhaps, by some of our American radio and television programs which make every youth conscious of the importance of atomic energy, a Beta Thickness Gauge marketed in England was described as an "atomic ray" machine used to measure the thickness of laps and to automatically apply corrections.

More than romance thrives south of the border, as disclosed by a Mexican's invention of a grooved coiler-calender roll to condense sliver to a thin, round strand to yield a more even drawing sliver.

Rigby and Mellon, Ltd., of Lancaster, England, introduced a new annular type slasher drying cylinder designed to give efficient drying at reduced cost. The English exhibit of knitting developments at Leicester disclosed improvements in circular and full-fashioned hosiery machines, snarl eliminators on winders, improved stop-motions, drying tumbler and constant-speed knitting creel warper.

Dyestuff and Finishes

If we are to take all the press releases seriously, there were over 400 new or improved dyestuffs, pigments and textile chemicals presented in 1950. The objectives of the research workers in this field were, of course, to provide

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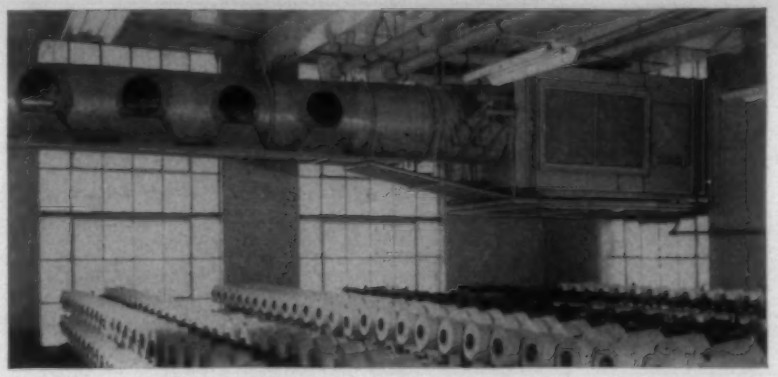
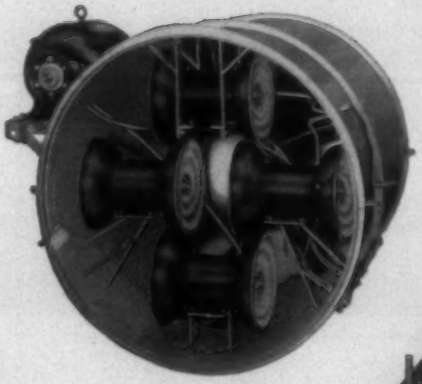
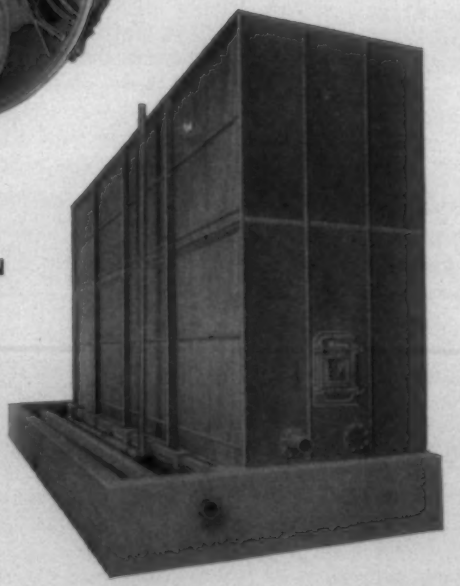




CENTRISPRAY WASHER SYSTEM

CENTRAL STATION AIR WASHER SYSTEM



Bahnson designed air conditioning systems are the result of 40 years experience in engineering equipment for humidity and temperature control in the textile industry.

To meet the demands for varied type plants handling various types of fibers, the Bahnson Company has developed and manufactured equipment and systems widely recognized for both economical first costs and operating costs.

Let us discuss your particular problem and present recommendations based on experience, for the air conditioning system best suited for your specific requirements.

Bahnson Company

ENGINEERS AND MANUFACTURERS

WINSTON-SALEM, N. C.

products to enable the dyer and finisher to obtain a wider range of colors with improved level dyeing and fastness qualities on all fibers, and also to offer finishing materials to enhance the appearance, hand and serviceability of the finished fabrics. These included products to give flame-resistance, reduced snag-resistance in nylon hosiery, anti-static properties in fabrics made of synthetic fibers with low moisture regain, stability to shrinkage in laundering, and crease-resistance to those fabrics that still do not behave as well as we would like them to in this respect.

One of the newest resin materials announced for imparting crease-resistance and dimensional stability to fabrics woven of cellulosic fibers was Du Pont's Zeset. Assuming that some advertising man has not already dreamed of it, I suggest that an appropriate slogan might be "The last word in resin finishes."

A novel treatment said to give improved rate of water absorption and hence greater comfort in nylon woven and knitted apparel fabrics was the Hans Bick Nylonizing process whereby a nylon polymer emulsion is applied in a simple finishing operation.

The correction of some crazy results obtained in dyeing was indicated in a British patent covering a "shock treatment" in wool dyeing, in this case the shock being the making of sudden contact of the dyestuff impregnated fibers with a heated acidic solution.

A unique applicatioin for the high radiation absorption properties of a new green dyestuff was reported in the English press in describing how the addition of this Imperial Chemical Industries' product increased the yield of salt from evaporating sea water. Also from England came a new dyeing method as yet not described which was said to give two-tone or contrasting color effects.

Experimental equipment utilizing hypersonics was said to be under investigation by one dyestuff manufacturer for the application of color to synthetic yarns, and an Australian firm was reported to be preparing to offer the American housewife an inexpensive home laundering machine using ultra-sonics or high-frequency sound waves. Among the advantages claimed were the elimination of severe mechanical action responsible for some shrinkage and felting in the case of woolen fabrics. An appropriate thesis subject for the clean-minded textile student might be "The Importance of High Frequency in Washing."

Dyeing and finishing innovations were a jig-dyeing system which uses a suction pump to draw dye liquor through fabrics, a heavy-duty padder, a photo-electric controlled de-twisting machine, a tensionless washer and a positive overfeed tenter frame with a novel selvage guider. An improved semi-decating machine with a hydraulic variable drive and automatic tension was described early in the year, and although it had been introduced before 1950 the operation and construction of the English dyeing machine using molten metal were given in greater detail.

Dean and Sherk, Inc., of Lawrenceburg, Ky., claimed the development of a new pressure dyeing method for obtaining light-fast colors on nylon, Orlon acrylic fiber and Fiber V. From Italy came word that a Milan company was prepared to offer American rights to a printing process based on trichrome photography. Also of interest to printers was the Dewey and Almy Chemical Co. blanket made of natural and synthetic fibers welded with synthetic rubber.

New types of heat-setting for nylon fabrics were one which utilized radiant heat through panels of Fiberglas incorporating wire heating elements, another dependent on direct gas infra-red heat and a third which featured a pre-heating treatment prior to setting to relieve strains in the cloth with cooling by air blasts as well as a cold cylinder.

Among new techniques suggested for faster dyeing of nylon was one revealed by two Clemson College students who found that treatment with tannic acid prior to dyeing with vat colors was very effective.

New Developments in Fabrics

The application of fur in short-staple lengths to one or both sides of plain woolen goods by a novel process of "inlaying" resulted in the introduction of a new type of fabric with a true fur touch. It was expected that this material would eventually find its place in some forms of wearing apparel. Rayon "fabulous fake furs" enjoyed considerable popularity, but were hardly the answer to the question asked of a store gift counselor, "What do you suggest for someone who wants a mink coat?"

Acetate rayon fabrics were given a quilted appearance by the selective application of heat in finishing, according to a British patent, while domestic processors of vinyl film announced success in obtaining interesting quilted effects by embossing. A rubber company assigned the name of Vapotex to a waterproof coated fabric which permitted the transmission of water vapor and was still resistant to repeated washing or dry cleaning.

Milium, the metallic treated lining fabric which was claimed to retain body warmth without the need for heavier insulating materials, was unveiled as the silver lining of the clouds invaded by research workers mysteriously engaged in creating what was originally disclosed only as Fabric X. It is interesting to note that a few weeks ago a treatment called Thermium was announced as a method for obtaining increased retention by leather and furs treated with a metallic coating. In the case of fur coats this might truly be called "gilding the lily."

Nylon sheets and pillow cases do not sound very original, but the trade name under which such items were introduced in Canada last Summer merits a hearing—it was "SWISH."

Utilizing the high shrinkage characteristics of direct spun viscose rayon yarns, fabric technicians developed a most interesting fabric made with continuous filament nylon warp and direct spun filling. This cloth, when properly woven and finished with a durable type water-repellent finish, has a very high degree of resistance to penetration by heavy rain, while at the same time is is light in weight and high in tensile strength and tear-resistance. A new wrinkle was offered in women's nylon hosiery last year with the presentation of permanently-set lengthwise pleats which disappear when the stockings are worn but supposedly give a better fit.

Testing Methods and Research Organizations

Among the new laboratory testing instrument and methods reported last year were an accelerated gas-fading test, the Arealometer for measuring cotton fiber fineness and maturity, a gas-fading chamber which can evaluate 140 samples in three hours, a rapid method for wool grading and the commercial production of the Shaevitz single fiber tester providing stress-strain data at variable rates of loading. The Instron Engineering Co. offered a group of new type self-aligning tensile testing machine jaws to give in-

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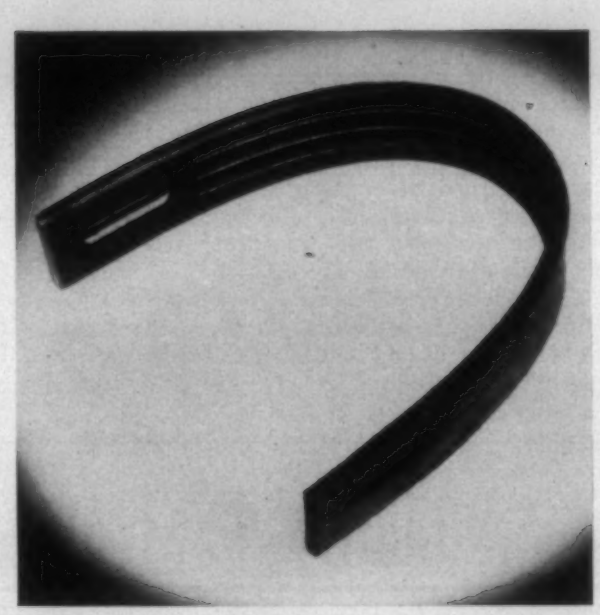

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Of The Finest Texas-Tough Hair-on Leather For Maximum Service.

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Textile Mill Supplies **Blanco, Texas**

creased gripping efficiency. A new wide-field binocular-microscope featured a pointer attached to a precision moveable slide for thread counting.

From the Department of Agriculture came a suggested modified technique for making cotton fiber maturity tests by using sodium hydroxide and a micro-projector and a mechanical cotton sampler that collects lint during ginning and packages a cross-section of the bale into a true sample. A new model of the Taber abraser incorporates dual abraiding wheels criss-crossing their abrasion paths. English scientists described a new yarn evenness tester utilizing a modified dielectric comparator, a moisture tester which used infra-red lamps as the heat source, and a micro-projector said to simplify microscopy technique by providing an image on an eight by ten-inch screen with magnifications of up to 2,000 times.

Those concerned with shrinkage-testing were offered a new method known as the Strip Tester, claiming a high degree of reproducibility but no accurate laboratory predictability of performance in use. Other newly-developed instruments which were described during the past 12 months included one to measure static electricity charges on fabrics, the Wrinkle-O-Meter for simulating service tests in measurements of fabric wrinkling and a Terg-O-Tometer to determine fabric washibility and the detergent value of soaps and other materials.

The National Cotton Council sponsored a cotton research clinic in Washington about a year ago and a large group of the industry's leading technical men reviewed and discussed cotton research activities. A similar meeting is scheduled for next month.

Continued progress and interest in textile research were demonstrated in the excellent quality of the papers and record attendance at the annual meetings of the American Association of Textile Chemists and Colorists and the Textile Research Institute. Committee D-13 of the American Society of Textile Materials continued to do excellent work in the development and improvement of test methods and standards for textile materials. The famous Shirley Institute in England reported further installations of their original automatic doffer, advances in the development of automatic warp sizing take-up equipment and continued study of such problems as hypochlorite bleaching, drying and calendering operations.

While we cannot claim to be as efficient in our selling ability as the automobile industry, where it has been said they make no seconds, we can continue to boast that the textile industry was among the leaders in research achievements for 1950—and we are certain that we can look forward to more new and improved products and manufacturing methods in 1951.

Where there's Goldberg there's bound to be gold, insofar as textile literature is concerned. His paper was presented Jan. 3 at the meeting of the American Association of Textile Technologists in New York City.

Quality Control And Nep Control Papers Heard By S. T. A. Division

A REPRESENTATIVE group of approximately 75 mill supervisors and industry affiliates attended a meeting of the Piedmont Division of the Southern Textile Association at Fireman's Hall, Charlotte, N. C., Dec. 2. The meeting, which was arranged in order to revive activity and interest in the division, was presided over by John M. Caughman, a past president of the association and general superintendent of Spartan Mills at Spartanburg, S. C. During the meeting those present elected Marshall H. Rhyne, general superintendent of Chronicle Mills, Belmont, N. C., as division chairman.

Appearing on the program were Profs. John F. Bogdan, Ivan F. Feng and Dame S. Hamby of the North Carolina State College School of Textiles, Dean Campbell of the Raleigh school, Dean Hugh M. Brown of the Clemson College School of Textiles, and George E. Archer, sales engineer for Uster Corp. at Charlotte. Current activities at the two textile schools were described by the respective deans, Mr. Archer gave a short explanatory demonstration of the Uster tester, Professor Bogdan described the background of research work at N. C. State on nep control, which was later detailed and illustrated with slides by Professor Feng, and Mr. Hamby delivered a paper on quality control and testing. Abstracts of the remarks of Professors Feng and Hamby follow.

Feng Describes Nep Control Project

Neps in cotton are, of course, familiar things to any of you people who handle that material. What they are I think is now pretty well agreed upon. They are tangles of fiber. It also seems to be pretty well proven that they do not exist in the healthy, normal cotton boll. If those two facts are accepted, then somewhere between the time that we feed that cotton to our first machine and the time we make our yarn we are somehow causing tangles of these fibers. The thing we want to know is where they are caused in the manufacturing processes, so we can go back there and try to do something about it.

In thinking of the thing in general, we might ask ourselves how it is possible to bend or tangle a cotton fiber. I suppose you can do it by rolling it between the palms of your hands. Another way in which it can be done is by beating in the opening machines and in the pickers. You see it happen there, and in the rolling action between the cylinder of the card and the other parts you see it happen. Perhaps the key to the thing is a lack of fiber control. If you need to carry this material into the yarn in a straight fashion then you must somehow control these fibers and prevent them from tangling up.

While we know that cotton fibers are exceedingly strong, we know also that they can not stand much pressure. Because they are about a thousand times longer than they are broad, there is the thing that gives you the trouble. That rolling and how you can prevent it in your manufacturing is the key to nep control in the manufacture of cotton. There are five essentials to the control of neps, as follows:

Principle I—Proper Selection of Cotton—Our studies have shown that the nepability of cotton varies from variety to variety. We have found that fineness and maturity are significant factors in determining the nepability of the fiber. The more coarse and the more mature the cotton, the less tendency there is for it to nep. Some mills have come to realize this important principle and are therefore purchasing their cotton on the basis not only of grade and staple length but also on coarseness and high maturity. As you

have heard, coarse fibers possess far greater resistance to bending than fine fibers. Immature fibers, when viewed under the microscope, are nothing but transparent bands of cellulose with little body to them, and for this reason fine and immature fibers are more susceptible to being nepped up.

Principle II—Avoid Severe Treatment of Cotton—This principle applies to the processing at the gin as well as at the cotton mill. Later on, I will show you some slides illustrating the difference between rough and smooth-ginned cotton. At the mill, try to do with as little opening as feasible. Naturally, it is up to each mill to decide how much opening of cotton it needs. It will vary from mill to mill because the type of cotton purchased will vary a great deal also. We have found in our experience that reduced opening produces less neps. In other words, if you can get that cotton opened without allowing it to twirl and be rolled up and balled up in the opening line, the less chances are there for neps to be formed. We ran some tests running cotton through the superior cleaner once, twice, three, and four times; and we found that with each additional passage through the superior cleaner the resulting yarn was more neppy and the quality of the yarn had become worse. The same principle can be applied at the picking stage. I think that most mills are using too high a number of beats per inch. Mills have resorted to a lower number of beats per inch, with consequent improvement of yarns.

Principle III—Do Everything Possible to Reduce Loading in Your Card—Allow me to explain this more clearly. If we allow cotton fibers to hang around in the card, you will know that it will only cause trouble. In the first place, you are going to get more neps. Those fibers have no business in staying in the card longer than necessary.

If you let those fibers hang around, they are bound to get other fibers into mischief. Fibers become balled up, form themselves into neps, load up the card, and what do you get? You get a very neppy card web. So what steps can we take to facilitate the movement of fibers through the card as fast as possible without loading?

(1) *Closer settings:* Let's close up our settings between the flats and the cylinder. By bringing them closer together, there is less chance for the fibers to roll up and to allow themselves to become embedded in the wires.

(2) *More frequent stripping:* In time, the card is naturally going to become loaded, and those fibers that are embedded in the clothing will get those fresh fibers coming into the card into trouble. I will show some charts later on, plotting the relationship between stripping cycle and nep formation. In the cottons that we have used, we have found that neps increase at the same percentage in relation to time after stripping. To emphasize this principle, we conducted some tests on the card equipped with metallic clothing. By comparing the yarns which we have made on the regular flat top card equipped with normal card clothing with those yarns made on the card equipped with metallic clothing, we found the latter to be superior. They were far less neppy. I am not trying to state a case for metallic clothing. I do not know enough about its economics to discuss this subject intelligently, but I do want to illustrate the fact that the less you load the card the less neps you will form.

Appearing on the Southern Textile Association's Piedmont Division program last month were *(left to right)*: George Archer, A. Ray Marley, Ivan Feng, John Caughman, Dame Hamby, Dean Hugh Brown and Marshall Rhyne.

(3) *Grind the card more frequently:* We have found that if you keep your wires sharp those wires will be able to deliver the fibers forward more efficiently, since they will be held at the tip of those wires. If the wires are blunt, there will be a tendency for the fibers to slip and thereby retard the forward motion of other fibers. You can very well visualize that you will get a rolling action of fibers between those wires as a result of this.

(4) *Bring your doffer and cylinder closer:* Our tests have shown that if you bring the doffer closer to the cylinder, you are going to take more fibers off the cylinder. What you are doing there is reducing the loading of your cylinder, and it stands to reason that your cylinder wires are in a better position to perform their carding action. We have found from our results that with closer doffer-to-cylinder settings you reduce nep counts and you improve the appearance of your yarn considerably. We called this to the attention of one of the mills, which thought this small change was certainly worth trying, since it did not involve any additional costs.

Principle IV—Transfer the Fibers Gently During a Stripping Action—On the card, I am referring to the stripping action between the lickerin and the cylinder. I should like to illustrate this with a stunt which is performed by the famous Hell Drivers. Undoubtedly, some of you have seen this stunt to which I am referring, where two cars are racing along side by side about a few feet apart and a man tries to jump from one car to the other. You and I can be sure that he will accomplish that jump without much chance of getting hurt if those two cars are racing along at approximately the same speed. If, by any chance, there was a difference in the speed of the two cars you can be sure that a jump would be far more hazardous.

Let us apply that example to the action between the lickerin and the cylinder. We have found that a surface speed of the cylinder of 165 r.p.m. is equivalent to a speed of 24 miles per hour. A surface speed of a lickerin of 430 r.p.m. is equivalent to a speed of 11 miles per hour. With such a large difference in surface speeds, we could very well visualize that the forces involved in the transfer of fibers from the lickerin to the cylinder are severe. The chances are that some of the fibers are going to be compressed and rolled up, forming themselves into neps. Now, if we could increase the surface speed of the lickerin to approximate the speed of the cylinder, we are naturally going to get a far more gentle and a far more satisfactory transfer of fibers from the lickerin to the cylinder. Our tests have shown that with a cylinder speed of 165 r.p.m. and a lickerin speed of 800 r.p.m., which is equivalent to about 21 miles per hour, we were able to produce a yarn far less neppy and far more uniform.

Principle V—Improve the Distribution of Fibers onto the Cylinder—You are familiar with the fact that if we reduce our doffer speed we improve our quality. Let us now try to study that action more carefully. When we slow down the doffer, all that is changed is your doffer speed and the speed of the feed roll. Your cylinder speed, flat speed, and lickerin speed all remain the same. When you slow down your doffer speed, say for example from ten to five r.p.m., in effect what you are doing there is that you are feeding half as much cotton into the card. The amount of fiber on each tooth of lickerin will naturally be half as much, and the amount of fiber transferred from the lickerin to the cylinder will be half as much, also. It is only logical to assume, therefore, that you are achieving a far more even distribution of your fibers on the surface of your cylinder. Since you are getting a more even distribution on the surface of the cylinder, your wires are in a better position to card more effectively.

Supposing we wanted to retain our card production at ten r.p.m., how could we achieve that same even distribution? Our solution to this problem was simply raising the lickerin speed from 430 to 800 r.p.m., leaving the cylinder speed and the flat speed unchanged. And, in effect, you are accomplishing the same thing as if you had reduced your doffer speed by one-half. At a speed of 800 r.p.m., each tooth on your lickerin will be carrying approximately the same amount of fibers as if you had slowed down your doffer to five r.p.m. There, again, you transfer less fiber from the lickerin to the cylinder, which naturally will improve your carding action.

You might be interested to know that our tests showed that there was no weakening of yarn strength as a result of high lickerin speeds. To run your card at a doffer speed of ten r.p.m. and a lickerin speed of 800 r.p.m., you will notice that although we had increased our doffer speed from five to ten r.p.m. we did not make a proportional increase in the lickerin speed. We have our reasons for that. If we had doubled the speed of our lickerin, in this case

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to 860 r.p.m., its surface speed would have surpassed the surface speed of the cylinder; and when you do that you will be transferring fibers from the cylinder back to the lickerin.

I feel that this just about sums up the five important principles that I think will contribute toward the reduction of neps.

Quality Control and Testing (Hamby)

During the last four or five years there have been more new instruments developed and introduced into the testing field than in any other similar period within the last several years. This can be attributed to two reasons. As most of you know, the United States Government can be, and usually is, a very strict customer. Since it was practically the only customer of the entire textile industry from 1941 to 1945 or 1946, it put a tremendous strain on most mills to meet specifications. This resulted in a more extensive quality control program in most mills, and as a result, a more vigorous testing program.

This pressure brought about the second reason for the increase in new testing equipment. The technical personnel found that the testing apparatus was in some cases completely inadequate, and in other cases, the testing equipment was not measuring the properties which it was trying to measure.

These two reasons—first, the demand for more complete testing and second, the demand and necessity for more accurate and reliable testing—forced the textile industry into a development era of testing equipment.

Some of the new instruments that have been developed and are in use today are the evenness testers of which there are three: the Uster, the I.T.T., and the Pacific machine. The first of these to be placed on the market commercially were the Uster and the I.T.T. machines, with the Pacific machine being presented later.

As you know, uneven yarn can be the source of considerable trouble, and until these machines were developed, it was impossible to do a complete job in the analysis of yarn evenness. The most common method was by visual examination, which is an extremely inaccurate, if not an impossible, way of determining the evenness of any material.

The Saco-Lowell sliver tester, which has been in use for several years, was the first instrument of its type to be used extensively for this type of work, and it did and still is doing a good job in measuring sliver. The chief drawback to this instrument is the fact that it cannot measure the evenness of fine roving and yarn.

The Uster and I.T.T. machines work on the principle of passing a material through an electrical field and measuring the mass of fibers continuously as they pass through the field and simultaneously drawing a chart of the evenness of the stock. This chart can then be analyzed for variation, trends, patterns and certain types of defects in the yarn. As an example of this, Professor Bogdan has been successful in locating neps from sudden impulses registered on the charts.

One fault which some people found in analyzing the chart was that the answer obtained was average maximum per cent variation in the yarn. It was felt by some that this did not give a true picture of yarn, so the Uster Corp. and I.T.T. now has an integrator, which when attached to the instrument, will compute and give as the answer the average linear deviation for a given length of yarn. Some feel that this gives a clearer picture for yarn testing, and the average maximum variation gives a better picture of the sliver variation.

Regardless of the instrument or method of analysis that is used, it is now possible to measure yarn evenness; whereas before, it was virtually impossible to arrive at any accurate and satisfactory results.

Another field in which considerable work has been done is in abrasion testing, both on yarn and fabric. Prior to World War II and during the early part of the war, there were a few commercial abrasion testing machines available, and practically every mill in the country that was interested in abrasion testing had one or all of these machines in their laboratory. There was a general feeling throughout the industry that these machines were inadequate and did not give the actual resistance to wear of a yarn or piece of fabric. For this reason, the Quartermaster Corps, with the assistance of Mr. Stoll and Dr. Schiefer of the Bureau of Standards, both developed very good abrasion testers.

After these machines were developed, and for the first time that I know anything about, it was possible to correlate laboratory results with actual field wear. Mr. Stoll evaluated wear as follows: 30 per cent due to plane or flat abrasion; 20 per cent due to edge or projection abrasion; 20 per cent due to flexing or folding; 20 per cent due to tear; ten per cent due to miscellaneous reasons.

With this breakdown of wear, Stoll was successful in predicting the relative service of different military fabrics in the field.

Another fairly recent development of considerable significance to the textile industry is the application of the strain gauge to commercial testing instruments. Prior to the use of the strain gauge, the most common principles used for testing the strength of a material were the pendulum and inclined plane. The inclined plane machines are without a doubt more accurate than the pendulum method of testing, but even so, they are limited in the range of testing for which they can be adapted as compared to the strain gauge type of testers.

The principle upon which the strain gauge works is the change in electrical resistance of a wire when the wire is put under a tensile or compression load. With this delicate an instrument, it is possible to study the reaction of yarns and fabrics to different loads, different rates of loading and also to take any portion of the stress-strain curve and enlarge the section for further analysis and study.

As one example of what this type of tester will do, the textile laboratory of the Massachusetts Institute of Technology adapted a strain gauge to an impact tester for parachute shrouds. With this type of tester, it was possible to test the shrouds and actually record and see when each member of the shroud broke. This enabled the manufacturers of the cord to construct a perfectly balanced shroud with all members taking an equal impact load.

The most recent addition to the field of fiber testing is the Arealometer which has been developed by Dr. Hertel at the University of Tennessee. This instrument, according to advance information, is designed to measure fiber fineness and immaturity. It has only been on the market for a few weeks and the only information available as to the performance of the instrument comes from the Special Instruments Laboratory, Inc., in Knoxville, Tenn., which is offering the instrument for sale. I quote directly from their literature:

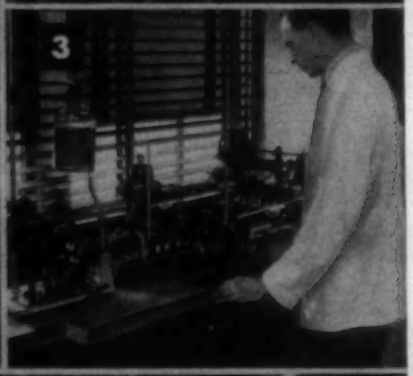
"The Arealometer is a precise instrument which measures fiber fineness and shape, from which may be calculated the weight per unit length and the perimeter. These factors are determined by measuring the resistance a given mass of fiber offers to the flow of air. The sample of specified mass is placed in a chamber and compressed until its resistance to the flow of air is equal to a standard resistance. The fineness is then read off a direct reading scale. By making this same measurement at a different compression a different reading is obtained if the fibers are other than round. The difference in these two readings is then an indication of fiber immaturity. The Arealometer may be set for a given sample to an

Pictured are some of those who attended the meeting of the Piedmont Division of the Southern Textile Association at Charlotte, N. C., Dec. 2.

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. JANUARY, 1951

New booklet tells the story of Avisco chemical research



1 – Pilot plant cellulose acetate spinning machine for the evaluation of experimental acetate rayons.

2 – Lab-scale steeping press used in preparing small batches of soda cellulose.

3 – Spinning a solution of man-made resin on compact laboratory scale equipment.

4 – Delving into nature's innermost secrets with the Department's electron microscope.

5 – Putting a tire containing experimental rayon cord to the test.

The work of the Avisco Chemical Research Department is featured in a new illustrated booklet which has just been released. "Chemical Research at American Viscose" covers the ideas back of the founding of the Department and contains a brief account of the objectives and organization of this important branch of Avisco.

The Chemical Research Department has participated in the creation and improvement of many processes and products essential to the textile industry. Its contributions to such products as high tenacity yarns, rayon tire cord and crimped staple are mentioned.

The booklet, "Chemical Research at American Viscose," is of interest to everyone taking part in the steady improvement of modern fabrics. Copies are available on request.

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W . . . which will increase output to the point where your old frames can be made competitive, both in quality and quantity of production, with new frames.

S . . . Send us your inquiries. We will be glad to have one of our representatives survey and estimate your frames without obligation, within their territories.

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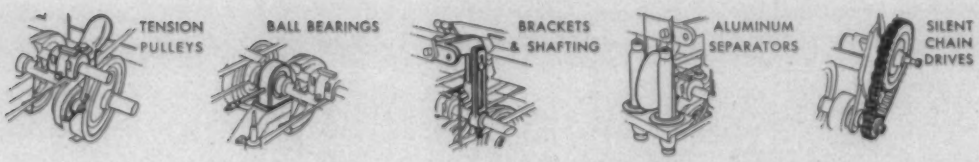

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Representatives: **JAMES P. COLEMAN, P. O. Box 1351, Greenville, South Carolina • WALTER S. COLEMAN, P. O. Box 722, Salisbury, North Carolina • MATTHEWS EQUIPMENT COMPANY, 93-A Broadway, Providence, Rhode Island • SAM HOGG, Atlanta, Georgia**

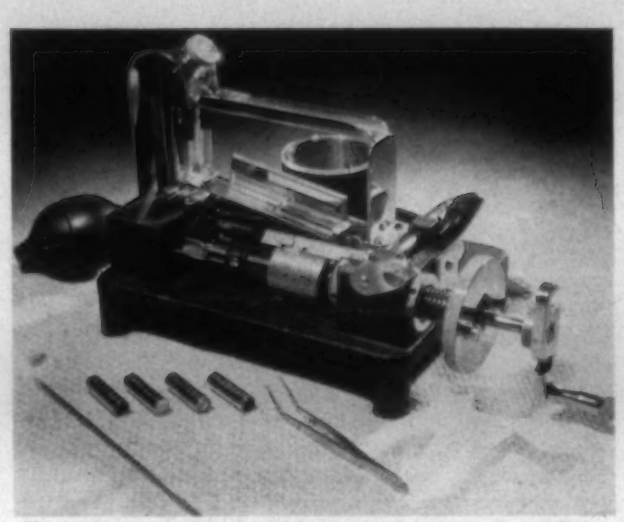
accuracy of one-half per cent. This allows a determination that gives an accuracy of five per cent for the immaturity."

As to the practical application of these different instruments; the evenness testers may be used as both research and quality control instruments. In fact, they are being used at present in both capacities. As for the new abrasion testers, they also may be and are being used as both research and quality control instruments.

The strain gauge type of machine, of which the Instron is the most popular, is used primarily for fundamental research. The instrument has several features which are not at all necessary for routine quality control testing. This, plus the fact that the machine costs several thousand dollars, eliminates it from the class of common testing instruments.

As stated previously, the Arealometer has not been available long enough to be completely evaluated and find its place in the textile industry; however, if it does the job that has been outlined by its producers, then there is no doubt that it will be of great value to both the research and quality control laboratories.

In summary, I would like to say that tremendous strides have been made in the field of quality control, testing and testing equipment. However, there are numerous problems which must be investigated and solved. The trend and movement toward a scientific approach to textile problems is well under way, and the textile industry will benefit greatly when this ultimate goal is reached.



The Arealometer, built by Special Instruments Laboratory, Inc., of Knoxville, Tenn., is used to measure fiber fineness (specific area) and shape, from which may be calculated the weight per unit length and perimeter.

Opening, Picking, Carding & Spinning

THE MILL OF TODAY

By ROBERT Z. WALKER

Part 23 – Care & Operation of the Drawing Frame

THE quality of sliver is generally predicated upon its evenness, with control tests centered upon the measurement and evaluation of the variation. The main concern of the mill, insofar as the operation of the drawing is concerned, is to adjust the frames in such a manner as to keep the sliver as even as possible. After the frames have been finally set up to process the particular stock being run, the problem is to maintain the equipment, so that poor mechanical conditions do not offset the care and patience expended in determining proper settings, drafts, and roll speeds.

Two fundamental factors in operating drawing successfully are the breakdown of the draft being used and the speed of the front roll. On the conventional drawing frames with six ends up at the back and four lines of drafting rolls, the draft will range between a minimum of 4.5 to a maximum of 6.5, for the same type of frame with eight ends up for comber preparation, the draft will range between eight to ten; lap back drawing, with five sets of drafting rolls, drafting a lap made of 16 ends, has a drafting capacity of from 11 to 18. The total draft should be split up between the sets of rolls so that excessive draft is avoided at all zones and so that the maximum draft is achieved at the zone in which the fiber is most suitably arranged. The actions of the fibers undergoing drafting vary in accordance with the amount of control exerted upon the fibers to hold them in proper position with relation to the remainder of the fibers in the strand. If fiber control is poor, then the resulting sliver will be uneven and this will be reflected by a decrease in the quality of the yarn spun. Fiber control depends upon such variables as the bulkiness of the strand, the type and condition of the top rolls, the pressure exerted upon the top rolls by the weighting system, the speed of the rolls, and the amount of draft in the zone.

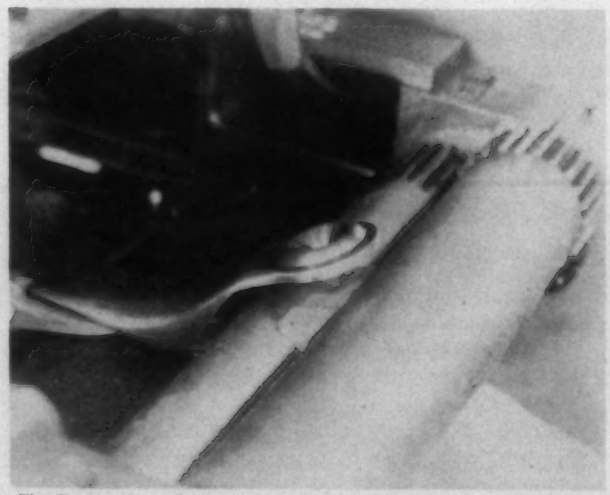
In general, the smallest amount of draft should take place at the back drafting zone and the greatest amount in the front drafting zone. This procedure is reasonable because the slivers first entering the drafting system are bulky and have not become even partially arranged in a parallel manner, whereas in the front zone, there has been a significant drafting that has brought about a partial reduction in bulk and a certain amount of parallelization of fibers. The draft in the remainder of the zones should be about evenly distributed, gradually increasing from back to front.

Production per delivery of a drawing frame is generally based upon the speed of the front bottom roll. Over a period of time a rule has been established that states that the most efficient performance of the frame will be obtained by running the front bottom roll not over 100 feet per minute when drafting carded sliver or 110 feet per minute when drafting combed sliver. Although it is not uncommon to find these speeds exceeded slightly in some mills, going as high as 120 feet a minute for carded work, there is some question whether the high quality and machine efficiency can be maintained when the higher speeds are approached. When such high front roll speeds are used, it causes all roll speeds to be increased in proportion to retain the desired draft, and fiber control may be lost. In addition, the possibility of lap-ups and other end failures are increased, all of

which tend to decrease the production efficiency of the frame, with a resultant possible effect on labor loads.

Lap-ups are very detrimental to machine efficiency because of the length of time required to clear them. A lap-up occurs when the strand, or part of the strand of sliver adheres to either the top or bottom roll and begins to wind itself around the roll. Once a lap-up begins, it is only a matter of a short time before a mass of stock is wound tightly around the roll. The best method to prevent lap-ups is to keep the roll surfaces smooth and dry, thus reducing the tendency of the fibers to stick to them. The bottom steel roll should be scoured periodically with whitin or pumice and all nicks and cuts smoothed down with either a very fine file or emery cloth. The top rolls should be buffed, if covered with a synthetic, or recovered or revarnished if leather covered, whenever the surface becomes roughened. One cause of increased numbers of lap-ups is the presence of oil on the rolls. Careless oiling of bearings may allow some oil to spread on the rolls, and this will invariably create a rapid succession of lap-ups. In removing lap-ups, the operator should never be allowed to use any instrument other than a brass hook, due to the danger of nicking the rolls. In many instances, lap-ups are cut from the roll with a knife, a much faster method, but more likely to damage the roll. If the knife scores the roll, the nick will catch other fibers and will soon start another lap-up. Atmospheric conditions may also be conducive to the formation of lap-ups. If the humidity is too low, static charges generated by the movement of fibers past each other and by the contact between the rolls and the fibers, will create conditions causing the strand to cling to the rolls. On the other hand, too much humidity will make the rolls moist and sticky, and again the sliver will cling to the rolls. The proper atmospheric condition for drawing cotton is a relative humidity of from 55 to 65 per cent and a temperature of from 75 to 85° F.

In some instances, a mill will find that close observation of lap-ups will show that the selvages of the strand are ragged and that these ragged edges start most of the lap-ups. This cause of trouble may be virtually eliminated, or greatly reduced, by the use of selvage guides placed between the front and second lines of rolls.



The distance from the trumpet to the bite of the calender rolls must be regulated closely for proper operation of the stop motion. Setting trumpets with a step gauge is a fast, accurate method of obtaining the proper distance.

Roll speeds also have a bearing on roll settings. The processing of a heavy sliver will generally require wider settings than for a light sliver of the same stock, running at lower speeds. A practical test to check on the correctness of roll settings is to press down with a steel rule on the strand of fibers between any two sets of rolls, with the frame stopped. The resistance to the pressure of the rule should be noticeable, but not too strong. In other words, settings should not be so close that the fibers are almost held at both ends, nor so far apart that a slight pressure will cause the fibers to pull apart. When the rolls are set correctly, there will be a noticeable difference in the tension at each drafting zone with the strongest resistance to the rule felt in the back zone and decreasing slightly with each succeeding zone.

After drafting, the most critical adjustment of the drawing frame concerns that part of the frame responsible for the tension between the front rolls and the calender rolls. This tension is governed mainly by the co-ordination of the surface speeds of the front rolls and the calender rolls, and by the size of the hole in the trumpet. The tension between the rolls is adjustable mainly by the use of a change gear, as tension changes are often required to cope with varying conditions in the atmosphere or in the characteristics of the stock being processed. The tension gear is part of the tension gear train, which is the gearing between the front roll and the calender roll, for the purpose of driving the calender roll. The tension is regulated by either speeding up the calender roll to slacken the tension, or by slowing the calender roll to increase the tension. The correct tension is readily apparent to the skilled observer, as the web of fibers emerging from the front roll and traveling to the trumpet will be slightly slack but will not continue to sag. This web, to prevent stretching of the sliver that would cause excessive unevenness, must not be pulled too tightly but also must not be allowed to sag until the middle contacts the frame, or until the selvages become ragged and fail to follow the remainder of the web. The tension may be checked by pressing down on the web with a smooth roll while the frame is running. When the tension is correct, the web will slowly return to its original running position without having the end breakdown. On most models of drawing frames, the tension is tightened by changing to a larger tension change gear.

The trumpet above the calender rolls is a much more critical part of the drawing frame than is generally believed. The trumpet shape must be suited to the length of fibers being processed, having a nose long enough to carry and direct the fibers to the bite of the calender rolls. The trumpet must be set to the bite of the calender rolls in accordance with the length of the staple being run. The distance is measured from the tip of the trumpet to the bite of the calender rolls, and should be slightly greater than the staple length. Setting the trumpet closer than the staple length is to be avoided, as the end may come down due to the plugged trumpet, but it will not be able to actuate the stop motion, as the fibers caught between the trumpet and the calender rolls may hold it down in the running position. The adjustment of the trumpet is regulated by movement of an adjusting screw under the trumpet arm.

Long-staple fibers will not require the long-nose trumpet necessary for the control of shorter staples. The trumpet suitable for combed sliver will not be correct for carded sliver, as the more parallel fibers of combed work do not require as large a hole in the trumpet as the more bulky

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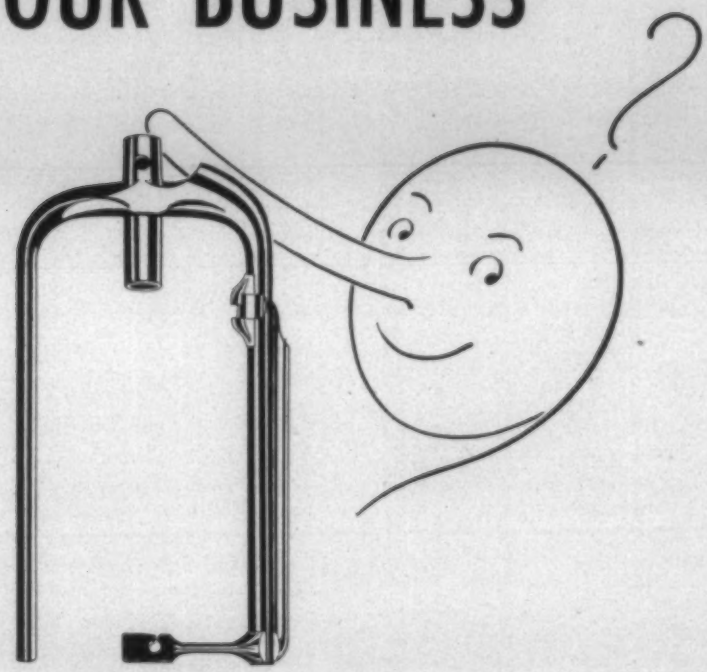

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and comparatively unorganized carded sliver. Generally speaking, it is beneficial to use the trumpet having as small a hole as possible. A trumpet having too small a hole will be annoying and will cut down the efficiency of the frame, as it intensifies the sensitivity of the stop motion so that every portion of sliver slightly oversize will plug the hole and will cause the stop motion, of which the trumpet is a part, to stop the frame. Undersized trumpets may also compress the sliver into a hard core that will create difficulties when the sliver is again drafted at the next process. Oversize trumpets are disliked because they do not compress the fibers together sufficiently, making soft, very lofty sliver which is difficult to handle, to coil in the can, and to draw from the can without stretching and breaking. Stretching of the sliver is one of the most prolific causes of unevenness. Loosely compressed sliver is also to be avoided because it prevents coiling the maximum amount in a can, and this will have an effect of reducing over-all efficiency both because of shortened doffing intervals at the drawing frame and creeling at the next process.

Standard trumpet sizes have been set up which will give good results for most mills, although special conditions in a mill may require slight alterations in the size. The trumpet size may be determined by the following formula:

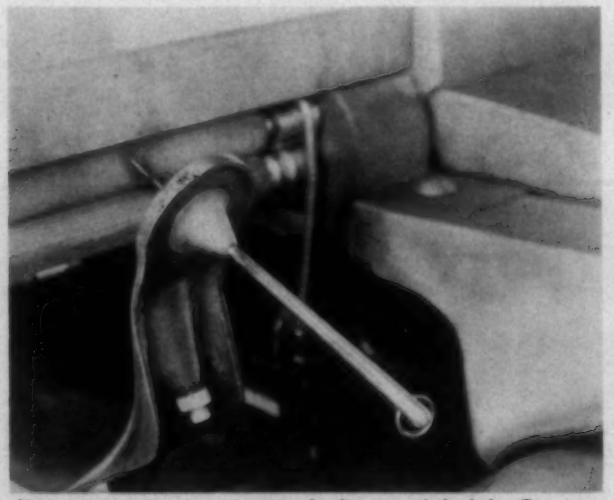
Diameter of trumpet hole in inches = wt. in grs. $\times$ C $\times$ .015625.

For four-roll breaker drawing	C = 1.18
For four-roll finisher drawing	C = 1.15
For five-roll drawing	C = 1.15

TABLE OF TRUMPET HOLE AND DRILL SIZES

Weight of Sliver	Card Trumpet	Drill Size	Four-Roll Breaker	Drill Size	Four-Roll Finisher and Five-Roll Drawing	Drill Size
40	.140"	28	.117"	32	.113"	33
45	.150"	25	.124"	30	.120"	31
50	.159"	21	.130"	29	.125"	30
55	.166"	19	.136"	28	.130"	29
60	.177"	16	.143"	27	.140"	28

These diameters may not be exactly correct to suit some combinations of mill conditions; for instance, some types of cotton are bulkier than others and require larger diameter holes in the trumpets, but this may be overcome by using a reamer to enlarge the hole slightly. Trumpets should be checked periodically by inserting a tapered stick gauge into the trumpet hole. All trumpets will gradually wear, due to the abrasive action of the fibers passing through them, and in time the hole will have become enlarged to the point that replacement is necessary. A systematic inspection is also required to prevent the use of trumpets which have become nicked, scored, or rough, as any mar on the surface will tend to catch the fibers and disrupt the orderly fiber array of the sliver.



Using a trumpet gauge to measure the diameter of the hole. Trumpets worn oversize will not compress sliver correctly, leaving it weak and bulky.

A perfect polish should be maintained on all metal surfaces in contact with the sliver, as this is often a serious cause of sliver unevenness. The finger guides in back of the drafting rolls, the fingers of the stop motion, the trumpets, the surface of the calender rolls, and the underside surface and hole of the tube gear, are all points which should be carefully inspected and polished when necessary with pumice stone, whitin, or a similar agent. Worn calender rolls will allow the sliver to pass to the can without proper compression, and this will often create sliver that will be bulky and weak.

While inspecting the frame, all gears should be closely scrutinized for wear and play. Draft gearing, in particular, must be in perfect mechanical condition, as any lost motion, or intermittent motion, of the drafting rolls will create cut sliver, uneven drafting, and many thick and thin places. Extremely high variation in sliver evenness often traces back to the use of worn gears or worn studs. The gears of the tension train should also be given the same close examination to assure bringing forward the sliver under the same degree of tension at all times. If the tension gear train has an erratic motion, it will cause the web to be alternately stretched and then slackened, and will be reflected by an increase in uneven sliver. Finally, the gearing of the three-coiler motion must be in condition to drive the coiler and the tube gear in a smooth continuous manner, so that a maximum amount of sliver may be stored in a can without the coils collapsing or tangling when the sliver is withdrawn at the next process.

Another source of both uneven sliver and sliver full of serious imperfections may well be the top rolls and the clearers, unless a periodic cleaning schedule is closely observed. Cushion top rolls have largely replaced metallic rolls on all types of drawing frames, with the possible exception of coarse yarn mills. The earlier objections to cushion top rolls, such as the necessity for frequent revarnishing of leather covering and the tendency of the synthetic materials to groove and become slightly eccentric, have been eliminated because of the vast improvements in the composition of the synthetic coverings. Many persons consider other coverings obsolete today in comparison with the newer synthetics which retain their shape, are extremely durable, refinished by a simple buffing process, and often have ingredients in the composition that tend to counteract the generation of static electricity. However, the superior wearing qualities of the newer synthetics do not justify a relaxation of roll surface inspections. The ease by which these top rolls can be rebuffed and restored to their original trueness and excellent drafting surface should prove an incentive to the mill toward keeping the top rolls in a prime condition at all times. The limits of tolerance allowed when resurfacing a leather covered roll, because of the time and expense involved, should not apply to synthetic covered rolls where rebuffing is so inexpensive. Top rolls which have become grooved, no matter what type of covering is used, should never be allowed on the frame, as the relaxation of

YARN WOUND ON THE ROTO-CONER*

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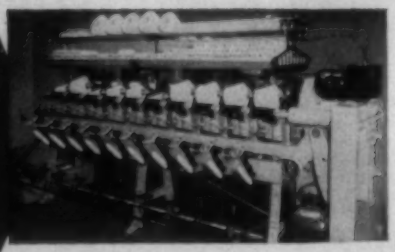
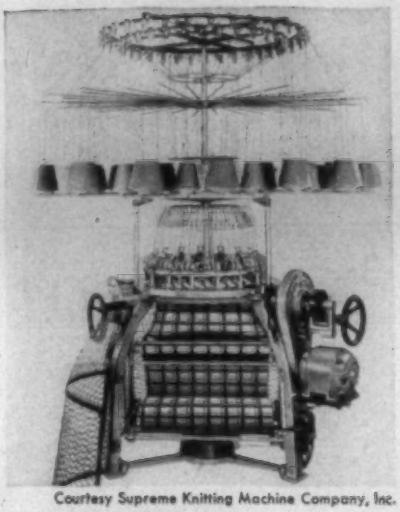


IN THE NEXT PROCESS



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IN THE KNITTING MILL:

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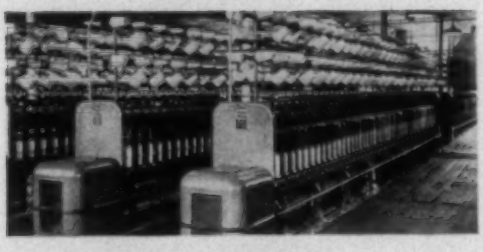
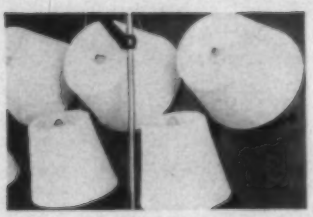
Many knitters *specify* Roto-Cones because all imperfections have been removed by slubbing to provide perfect running conditions on the knitting machine. The increasing taper allows high-speed delivery without sloughing. And, with less breakage of short fibers, due to the Roto-Coner's* smooth one-piece rotary traverse, the yarn is *loftier*.



IN THE TWISTING DEPARTMENT:

Doubling Eliminated

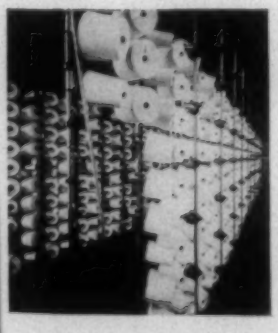
Doubling prior to twisting is eliminated when the Universal Roto-Coner* is used in conjunction with Atwood Model 10 Ring Twisters. Single end winding is faster than doubling. The cones (9° 36′, 9° 15′, or 3° 30′) are used as a supply for the Model 10 which, being equipped with single end stop motions, makes preliminary doubling unnecessary.



IN THE QUILLING DEPARTMENT:

Improved Quality

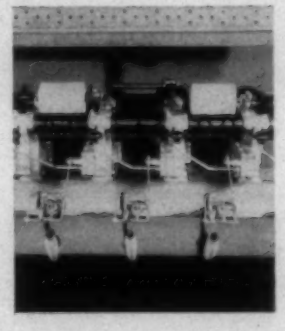
Automatic filling winders run without interruption from magazined cones. Accurate inspection, on the Roto-Coner*, of yarn wound from spinning bobbins increases loom efficiency and fabric quality.



IN THE WARPING DEPARTMENT:

Continuous Supply

Maximum warping efficiency can be obtained only from large packages of thoroughly-inspected yarn. Many mills today use Roto-Cones as a supply for their high-speed or jack spool warpers.



IN THE DYEHOUSE:

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Dyers consider that packages wound on the Roto-Coner* are superior for any system of dyeing. Soft packages are wound at 325 to 500 ypm with uniform density throughout and from spindle to spindle.

ROTO-CONER* THE FLEXIBLE WINDER

The Roto-Coner* winds a complete range of staple yarns onto a variety of package shapes and sizes. Rotary traverses are made in four standard groove arrangements and from either Bakelite or cast-iron.

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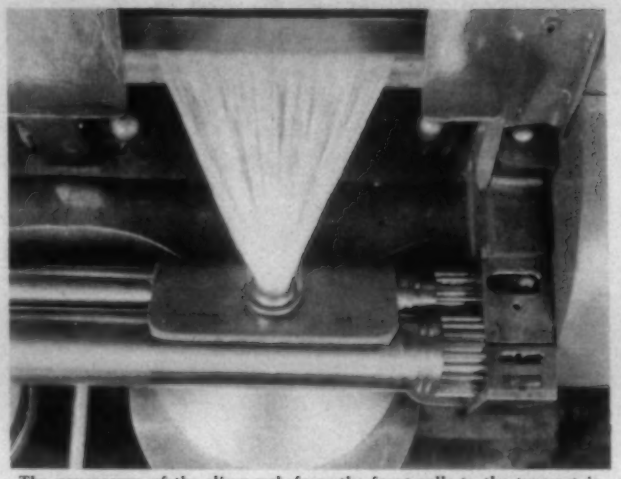
pressure on the fibers under the groove drastically reduces the fiber control. When the fiber gripping ability of the drafting system is lost or impaired, there will be an immediate increase in sliver unevenness as groups of fibers begin to slip through the rolls instead of being drafted, thus making thick and thin places which will persist even after repeated drafting in subsequent processes.

One of the qualifications required for high quality sliver is that the cleaning program be suited to the stock being processed. Dirty cotton, brittle fibered cotton, or stock having a high percentage of short fibers that will be released as fly, will require more frequent cleaning of the frame than will the cleaner, longer stapled cottons, or combed stock. Fly and trash will accumulate at all points along the path of the sliver and when these accumulations become too large, will be dragged into the good stock where they will either cause the end to come down, thus decreasing machine efficiency, or else they will be carried forward to the next process and finally into the yarn to produce a poorer quality yarn and fabric. In particular, the clearers must be picked often enough to prevent "eyebrows" or lumps of waste fiber which build up until they are finally caught and carried with the good sliver. "Eyebrows" are often troublesome because the surface of the roll covering is too slick and may be remedied by using a covering having sufficient friction to carry the fibers well up under the clearer. In any event, the clearer cloth should be replaced whenever the nap becomes worn and slick and loses its fiber retaining qualities.



The appearance of the sliver web from the front rolls to the trumpet is a good indication of quality. Note the excellent selvages, even fiber distribution and carefully adjusted tension which marks this as being a good sliver.

Drawing is a comparatively inexpensive operation and is a simple process. The quality of sliver produced is dependent upon the selection of the proper model and drafting elements for the local mill conditions and most of all, upon the attention given the equipment while in operation. Cleanliness and the maintenance of a few mechanical assemblies will assure that sliver quality be held at a high level.

Handling Reworkable Waste

By V. E. OLEMAN

REWORKABLE waste is an item that all cotton mills have to contend with as a necessary evil. And an evil it is, for all mill men know that the less reworkable waste you make, the better the all-round efficiency of the mill. As to how much reworkable waste a mill should make as a minimum depends on a number of factors as grade and staple of cotton, opening and picking operations, number of fly frame processes, whether mill is a carded or combed yarn mill, and the degree of supervision.

Reworkable waste may usually be divided into two main categories—card room reworkable waste and spinning room reworkable waste. Grade and staple of cotton vitally effects the amount of reworkable waste in that efficiency of card room and spinning room depends on suitable raw materials to begin with. Skimping on grade or staple for the desired end-use will usually cause an increase in reworkable waste. But let us assume that the required staple and grade is available for the desired end-use.

Like the seed you plant in the ground, the kind of picker lap you put out of your picker room has a vital effect on what is produced later on. Modern lap testers are very essential to the modern mill to ascertain the yard-by-yard variation in laps. Other things being equal, the less variation shown by the lap tester, the less the variation will be all along the line in later processes. Research is being conducted to a point that before long there will be a lap tester available which will show inch-by-inch variation of the lap. This research has shown that any variation in the lap of over 1¼ inches will effect the variation in the card sliver. In other words, as the variation in segments in the lap that are 1¼ inches long, so goes the variation in the card sliver.

How often do you check the dampers in the screen sections of your pickers? Are they open sufficiently to spread the cotton evenly on the cages? I have been in mills where the dampers were entirely closed (and the overseer didn't know it), with the cotton being thrown forward entirely by the action of the beaters, resulting in a lumpy lap.

Do you keep your "peep-hole windows" clean on your screen sections of pickers? These should be kept clean at all times so you may see the action of the air currents from the fan as to how the cotton is being laid on the screen section. I have seen a mill on fine combed yarns improve its spinning considerably simply by proper adjustment of drafts on the picker. In short, they laid the cotton evenly on the screen section instead of in lumps.

Lap pins effect the amount of reworkable waste, for crooked lap pins prevent the proper unwinding of the last part of the lap and this is often broken out and put into reworkable waste. Periodically, lap pins should be tested to see that they are straight and if not those which are bent should be sent to the shop to be restraightened.

A much-neglected item on the picker is the split-lap preventer. The fingers of the split-lap preventer should

crease the cotton so that laps will not split and cause reworkable waste. Split laps not only make reworkable waste at the card, but also cause bad work all along the line, which in turn pyramids the reworkable waste.

How the lap is laid in at the card has a lot to do with the amount of reworkable waste. It is a good practice to train the card hands to unwind the last yard or so of the lap, even to letting it rest on the floor if necessary. In this manner, it is usually only necessary to tear off about 12 to 18 inches of the lap, which is then put into reworkable waste.

Care in stripping cards has a lot to do with controlling reworkable waste. It is a good practice *not* to tear the sliver end down between the calender roll and the coiler head. Instead, piecing up after stripping should be done at the trumpet of the calender roll. You will find that with a little practice that a better piecing can be made this way than by tearing the end down and allowing the sliver to coil on the floor. It is usually necessary only to allow the web from the doffer to fall on the floor only a very short time before piecing up. Only three or four cards stopped at a time are necessary to keep up with the stripping and piecing up if air is used, and at the same time make a minimum of reworkable waste.

In a combed yarn mill an important factor is the way the sliver and ribbon lapper are run and creeled. I have been in a combed yarn mill and observed a lapper hand running out a creel on a sliver lapper where he attempted to run the creel out by placing the last of the cans on the floor; by constantly laying in pieces on the back, he finally ran the creel out. The result was split laps on the ribbon lapper and combers. For when you lay in an end on the sliver lapper instead of piecing or folding it in, the end laid in doesn't care which side of the lap it sticks to, and as a result you have split laps.

As soon as we had the lapper hand creel the whole back as soon as the first can ran out, and turn and piece the rest of the cans, better work was observed all along the line following.

If you have only one process of frames in your mill, your reworkable waste will be lower than two or more processes for there are no bobbins to creel in the one process. But where there are two or more processes, much care in creeling and running pieces out must be exercised.

One thing that vitally effects the amount of reworkable waste in the card room is the amount of bad work made on the fly frames. It is a good practice to mark all roving being made with chalk and then when found and returned to the card room, it is well to have a board in the card room where the amount of bad work from each frame hand is posted, as so many bobbins of bad work for Monday, Tuesday, etc. Also it is well to have the hand that made the bad work to reclaim it if possible.

Now, what is the best method to control reworkable waste? The answer is by vigilant supervision and records. *First,* you must arrange to keep the reworkable waste separate for each hand in the card room. This can be done by taking old cans and painting them white for reworkable waste. The same can will do for all three shifts. *Second,* the reworkable waste must be weighed at the end of each shift by the section man or second hand or other responsible person. *Third,* it must be recorded on a properly designed reworkable waste sheet sufficient to carry a week's reworkable waste. *Fourth,* this record of reworkable waste should be placed in a prominent place in the card room and one in the spinning room so that everyone may see it. Nothing helps like posting this record to encourage competition in lowering the reworkable waste.

I have seen a combed yarn mill by proper supervision, proper records and posting of reworkable waste bring its reworkable waste down in a very short time from eight or nine per cent to about four per cent. Saving of reworkable waste saves not only the labor and overhead cost of the non-reworkable waste that is adherent in the reworking of this material. Also, reworkable waste, as all mill men know, will cause trouble when fed back into the work in excess. So the answer is supervision, records and competition.

In the spinning room, good waste receptacles are a vital matter. This especially applies to the matter of mixing of clearer waste with good reworkable waste. The more convenient the waste receptacle is to the spinner, the better this waste will be taken care of. For it is only human nature to do that which is easiest to do. When receptacles are few, hard to reach, out of the way, then you will have more reworkable waste on the floor, in the rest rooms or other wrong places.

Careful supervision should be given the creeling of the roving in the spinning. Two or more layers left on a bobbin soon amount to a lot of reworkable waste. Roving should be run down to the last layer on the bobbin. Whether the flyer is going up or down on the fly frame will have something to do with the reworkable waste as to when the bobbin is doffed on the fly frame.

There is no royal, easy road to low reworkable waste. It takes eternal supervision and thought and care.

The History Of Saco-Lowell Shops

Gibb, George Sweet, *The Saco-Lowell Shops, Textile Machinery Building In New England 1813-1949,* Harvard University Press, Cambridge 38, Mass.; $7.50, 807 pp.

APPEARING almost simultaneously with the history of Whitin since 1913, the history of Saco-Lowell Shops has recently been published and is now being distributed. The history was written by George Sweet Gibb, under the auspices of Harvard University and has been based upon the facts and figures obtained from old records and from interviews by the author with some of the persons still living who played a part in the company's history. Ranging from the period of 1813, when the first of the parent companies was founded, to 1949, the progress of the company is analyzed with relation to the business conditions of the times.

Mr. Gibb was selected by Harvard to undertake the task

of writing the book because of his previous experiences, which included a similar work entitled *The Whitesmiths of Taunton*. He was formerly instructor in business history at the Graduate School of Business Administration and is now senior associate in research of the Business History Foundation, Inc., a function of the Harvard School of Business. The difficulties encountered in gathering the material prior to evaluating and chronicling the ultimate effect of individual events is demonstrated by the fact that research and writing were extended over a 41-month period.

The history of Saco-Lowell Shops was difficult to reconstruct due to the loss by fire, accident and carelessness of many of the older records. The companies forming the basis of the present Saco-Lowell Shops were active, expanding organizations which reorganized, merged, and consolidated many times, and most of the records of the older, dissolved companies have long become dissipated or destroyed. A very tangible and broader difficulty confronting the formation of the history was the limitations as to the scope of the activities to be analyzed. Mr. Gibb devoted his greatest attentions to the outlining and analysis of the financial aspect of the history. The greatest criticism of his work is that the influence of sales and of technical developments has been neglected, excepting with reference to the part they play, in a very broad sense, in the financial soundness of the company. This same criticism may be applied to the treatment of individuals where accomplishments and not personalities are discussed. In general, the history is complete in its intended scope, is interesting, and reveals many events which have had tremendous effects upon the entire textile industry of this country.

The history commences with the days before the coming of the Industrial Revolution in this country and shows how the textile industry was a leader in the development of the United States as an industrial nation. The initial conception of the textile machinery shops began in the basements of what were to be spinning and weaving mills, as the machinery was built around designs secretly observed in England. The parent companies of Saco-Lowell were founded to supply machinery for specific mills in Newton and Waltham, Mass., and in Saco, Me. In time, each completed the primary purposes for which it was intended and then branched out into supplying equipment for other concerns. Mr. Gibb has traced the growth of each of the shops, the struggles of the infant companies for existence, the prosperous years when industry was expanding all over the country, the competitive period where survival in a full-grown industry required all of the resources of the financial geniuses directing the movements and ultimate consolidation of the shops; the tremendous problems of the depression years, and finally leading up to the present position of the company.

In order to portray the formation of the company, the author divided the history into three periods, namely, Part I—The Formative Years (1813-1853), Part II—The Adventurous Middle Years (1845-1912), and Part III—The Saco-Lowell Shops (1912-1948). The factual and chronological presentation is complicated by the necessity of tracing the transition of three different organizations, each with many own ramifications, and to co-ordinate and finally combine the history of each one into a final, complete record showing the effects, values, and contributions each parent company had upon the ultimate organization. At times competitors, and at other times associates, the different machine shops were always engaged in the same industrial activities and therefore related in their efforts and affected by the same general business conditions. The task of developing a practical historical theme requires tracing the growth of each individual shop through a period, and then interlocking this growth with that of the other organizations during the same time interval. The book is actually the individual history of three companies which do not become united until late in 1912 when the development of all three may be treated as one subject.

Francis Cabot Lowell brought back the theory and general use of the power loom from England and on the basis of the manufacturing advantage this would give him, founded the Boston Mfg. Co. in 1813. The site of the proposed mill was in Waltham, Mass. The basement of the mill was set up as a crude machine shop, with talented Paul Moody to direct the construction of the mill equipment. Eventually, the mill was put into operation, using hand picking, mechanical carding with a card having a cylinder and a small number of stationary flats; and drawing, roving, and spinning similar to that in use in the Slater Mill, the first power mill in this country. Moody invented a dressing machine for applying sizing to the warp and also built successful power looms. Moody's two important contributions to the technical progress of the industry was the warp dressing machine and the filling spinning frame.

Boston Mfg. Co., after building sufficient machinery for its own needs, began selling the services of its machine shop. Highly successful, the machine shop was moved to Lowell, Mass., in 1824, and became an independent organization in 1845. At this time, the machine shop was given a charter and was called the Lowell Machine Shop. From this period until 1897, the Lowell Machine Shop flourished and expanded to become the greatest textile machinery manufacturer in the United States.

In 1897, competition from other manufacturers began to be felt, and as a result of a weak sales promotion program, the financial security of the company began to weaken. At this time, struggles to capture sales were ruthless and determined, particularly with regard to the accelerated textile industry in the South, and the Lowell Machine Shop was not equipped to handle the situation. In 1905, the stock of the Lowell Machine Shop was divided into five groups and purchased by a group composed of practically all the other textile machinery manufacturers in the country. The negotiations for this sale brought a new and commanding figure into the industry, Robert F. Herrick. Herrick eventually assumed command of the Lowell Machine Shop and in 1911 bought up the stock of the company.

The Kitson Machine Shop had been bought by the Lowell Machine Shop in 1905, under the guidance of Herrick and was therefore an integral part of the concern. Kitson Machine had been recognized as supreme in the manufacture of opening and picking machinery since 1852 and was highly successful. The sale of Kitson was not due to financial difficulties but rather to the fact that Herrick was willing to pay such a high price for the property and facilities. In 1912, still under the controlling influence of Herrick, the Lowell Machine Shop combined with the Saco-Pettee Co. to form the Saco-Lowell Shops.

The site of Saco-Lowell's second parent company was on the Saco River, at Saco, Me. A nail manufacturing company, the Saco Iron Works Co. had been built in 1811 and was reorganized in 1825 to form the Saco Mfg. Co. In 1826,

the machine shop started plans to manufacture textile machinery, the real purpose in incorporating the Saco Mfg. Co. From the onset, the Saco plant was destined to run into misfortunes and depressive operating conditions. The company was liquidated in 1830 after a fire totally destroyed the building and machine shop.

The ruins were purchased by a group who organized the York Mfg. Co., and by 1836, a machine shop had been installed and was sufficiently operating to produce enough equipment to start up two entire mills for the company. In 1837, the machine shop was divorced by the parent mills and set up under its own charter as the Saco Water Power Co. The new shops operated spasmodically under adverse business conditions and unfavorable management and was never during this period placed on a secure financial basis. Machinery built and in operation by the shop was sold in 1850 to a new organization, Pepperell Mfg. Co.

These conditions changed in 1850, when for the first time the shop turned to the open market and began making machinery for other companies other than those located directly in Biddeford and Saco. In 1850, the machine shop was in a dangerous position for, because it had built machinery only for Biddeford and Saco, the incentive for progressiveness had lagged. The machine tools were obsolete, and the design of the textile machinery it was building was also old. When the shop began to turn to a general marketing of its products, it prepared first by sending a man to England to study new cotton mill machinery. As a result of this trip, the shop was able to produce excellent roving and spinning frames and to earn a reputation for achievement in this line. In 1867, the Saco Water Power Co. was reorganized to become the Saco Water Power Machine Shop and was finally freed from all forms of exploitation which had previously hindered it from dealing in the open market with other manufacturers of textile machinery. From this date until 1897, when the merger with the Pettee Machine Works was completed, the shops operated with a fair measure of success.

In 1814, a site for a pioneer mill was purchased to mark the founding of the third parent of Saco-Lowell. This mill was to be a cotton mill, using equipment to be built in its own machine shop, under the guidance of Otis Pettee. Actual work did not start until 1823, when the Elliot Mfg. Co. and formally organized. Otis Pettee was not only an inventive genius but was also an outstanding businessman. He patented a machine design which accomplished the winding of roving on a bobbin and invented the double speeder. He also managed the machine shop ably and built equipment for both the first and second mills of the Elliot Mfg. Co. Still a part of that company, he next began filling orders for machinery for outside concerns.

In 1831, Otis Pettee finally left the Elliot Mfg. Co. and set up his own shop in Newton, Mass. Success was immediate, as he received orders for both domestic and foreign mills, making the first known significant exportation of textile machinery from the United States. Little is known of the period up to 1873, as far as the financial status of the machine shop. The shop was purchased from the Pettee family after the death of Otis Pettee by Henry Billing and became incorporated as the Pettee Machine Works in 1862.

One of the stockholders in the new corporation was Samuel Snelling, who placed his son, R. Paul Snelling, in the company. Paul Snelling and Frank J. Hale, another young man in the organization, together eventually controlled the company and played an extremely colorful and instrumental part in the growth of the textile machinery manufacturing industry. Snelling secured patterns and manufacturing right to the revolving flat card from England; and it was this machine which skyrocketed the company to a top position as a machinery builder. Hale and Snelling were a selling team which became difficult to beat, and it was their salesmindedness which later made the early days of Saco-Lowell so successful.

The Southern agency for the Pettee Machine Works was given to the Charlotte Machine Co. of Charlotte, N. C., first under its founder, H. S. Chadwick, and then under A. H. Washburn. During the highly competitive times which wreaked havoc with the Lowell Machine Shop, the selling powers of Snelling and Hale brought their company into a stronger position. The practice of taking mill shares as partial payment of machinery was encouraged and utilized to its fullest advantage by them, and this was later to be a significant factor in their final success.

Because it was an essential selling point to have a complete line of machinery, both Snelling and Hale urged steps which finally cumulated in the merger of the Pettee Machine Works and the Saco Water Power Machine Shop. This was accomplished in 1897, the new corporation being called the Saco and Pettee Machine Shops. The new company embarked upon a long period of prosperity under the leadership of Hale and Snelling. In 1912, they were persuaded, and not forced by economical reasons, to merge with Robert Herrick to form a unified company, the Saco-Lowell Shops. On Nov. 1, 1912, the Saco-Lowell Shops came into existence to unite in one corporate enterprise, the machine shops at Lowell, Newton, and Biddeford. The shops were then in a position to offer their customers a complete line of mill machinery, including the technical knowledge required to plan and set up a cotton mill. Picking machinery was built in Kitson, cards and drawing at Newton, roving and spinning at Biddeford. Lowell manufactured worsted and silk machinery and cotton twisters, spoolers, warpers and slashers. An energetic and driving sales force was in the field to secure the sales necessary for continued success. Herrick was made chairman of the board, with Snelling treasurer and Hale general agent. Roger Davis was made Southern agent, and established his sales force at Charlotte.

During the period from 1912 to 1923, Herrick retained control of the company but left the management to the able hands of Hale and Snelling. During this period, the Saco-Lowell Shops enjoyed tremendously successful and prosperous operations. In 1919, Robert F. Herrick, Jr., came to work for the company and in 1923, became general agent. Both Hale and Snelling had slowly withdrawn from the active management of the organization and retired with Herrick's appointment. This retirement was at their own request, and they continued to give advice whenever it was sought by young Herrick.

Herrick, Jr., formulated several policies which later proved inadequate or ill-advised because of either poor judgment or ineffective execution, and the company suffered under his administration. By 1924, the effects of a depression were beginning to be felt, and a series of rapid financial blows threw the shops into a severe financial crisis. The market for textile machinery had disappeared while large

amounts of money had been expended to leave a low surplus as a cushion against poor business years. Credit had been completely expended, and in 1926, creditor banks took over control of the company. Herrick, Jr., resigned as treasurer, and Hale, Snelling and Herrick, Sr., again entered into active control. The man chosen by the banks to head the shops and to try to pull it through the crisis and avoid liquidation was David F. Edwards.

Mr. Edwards became president in 1926, and immediately laid plans to curb all expenditures and to eliminate non-essential activities. The first large step which was taken was the consolidation of all manufacturing areas. The Lowell shop and the Kitson shop were liquidated and the personnel and equipment divided among the Biddeford and Newton shops. A steadily shrinking of orders and the use of new machinery methods requiring less manufacturing area, dictated that further consolidation was necessary. Finally, in 1932, all of the facilities in Newton were taken to Biddeford.

In 1933, the sales efforts of Vice-President W. F. Lowell, particularly with regard to a growing textile industry in South America, began to bring in sufficient business to alleviate the immediate dangers of liquidation. In 1926, W. F. Lowell negotiated for and secured the exclusive rights to manufacture the LeBlan-Roth system of long draft. The impact of this technological advancement, which made existing machinery obsolete, created a demand for new machinery which eventually allowed Saco-Lowell to work its way out of the financial difficulties which had hitherfore seemed insurmountable. From this time on to the present, the success of Saco-Lowell has been based upon a leadership in technical skill and a reliance upon its engineers to design and produce new and more highly developed machinery.

Factors Effecting Carded Yarn Appearance

Recently made available by the Cotton Branch, Production and Marketing Administration, U. S. Department of Agriculture, is a comprehensive report on the "Relation of Appearance of Long-Draft Processed Carded Yarn to Six Elements of Raw Cotton Quality and Yarn Size." The study upon which the report is based included 828 lots of American upland cotton and 2,484 lots of yarn from the test series for selected cotton improvement groups and the Experiment Station Annual Variety Series, crop years 1945-47. Most of the cottons represented the leading varieties in commercial production in the rainfall and irrigated parts of the American cotton belt during that period.

In its summary and conclusions the report states, in part: "The results presented in this report strongly emphasize a number of advantages to be attained from considering the appearance of various sizes of yarn collectively as the dependent variable in such correlation analyses and from using the factor of yarn size in regression equations for estimating the appearance of any size of yarn on the basis of a given set of cotton fiber properties. Such emphasis, however, is not predicated on the assumption that yarn size is a property of either yarn quality or of raw cotton quality, in the generally accepted sense, but on the fact that yarn size is a factor of yarn construction and one which is closely associated with different levels of yarn appearance. Inclusion of yarn size as a contributing factor to yarn appearance, therefore, becomes necessary to the development of any prediction equation applicable to all sizes of yarn within the general and practical spinning range of cotton."

Develop New Automatic Cotton Sampler

A mechanical cotton sampler that automatically collects lint during ginning and packages a cross-section of the bale into a true sample, has been developed by the U. S. Department of Agriculture. The sampler diverts small amounts of cotton flowing through the gin lint flue at six periodic intervals during the ginning of a bale and presses and packages this cross-section of the bale contents into an actual sample, which carries the same identification as the bale from which it was taken. The device is entirely automatic and re-sets itself to repeat the process for each bale ginned. The sampler was developed at the Production and Marketing Administration cotton laboratory, Stoneville, Miss.

The uniform size and preparation of samples taken by the new machine are favorably to accurate classification. The sample is long enough and contains enough cotton to allow it to be divided into duplicate samples. This eliminates or reduces the need for a later cutting of samples. One sampler has been installed in a New Mexico gin where samples are being used for classification and marketing.

The kind of samples collected by the new machine are valuable in detecting the presence of mixed quantities in a bale. Spinners, especially, should derive immediate benefit from use of such samples by being able to evaluate the actual contents of a bale prior to the opening of the bale at the mill. Through use of such samples mills could select bales with contents of uniform quality if so desired.

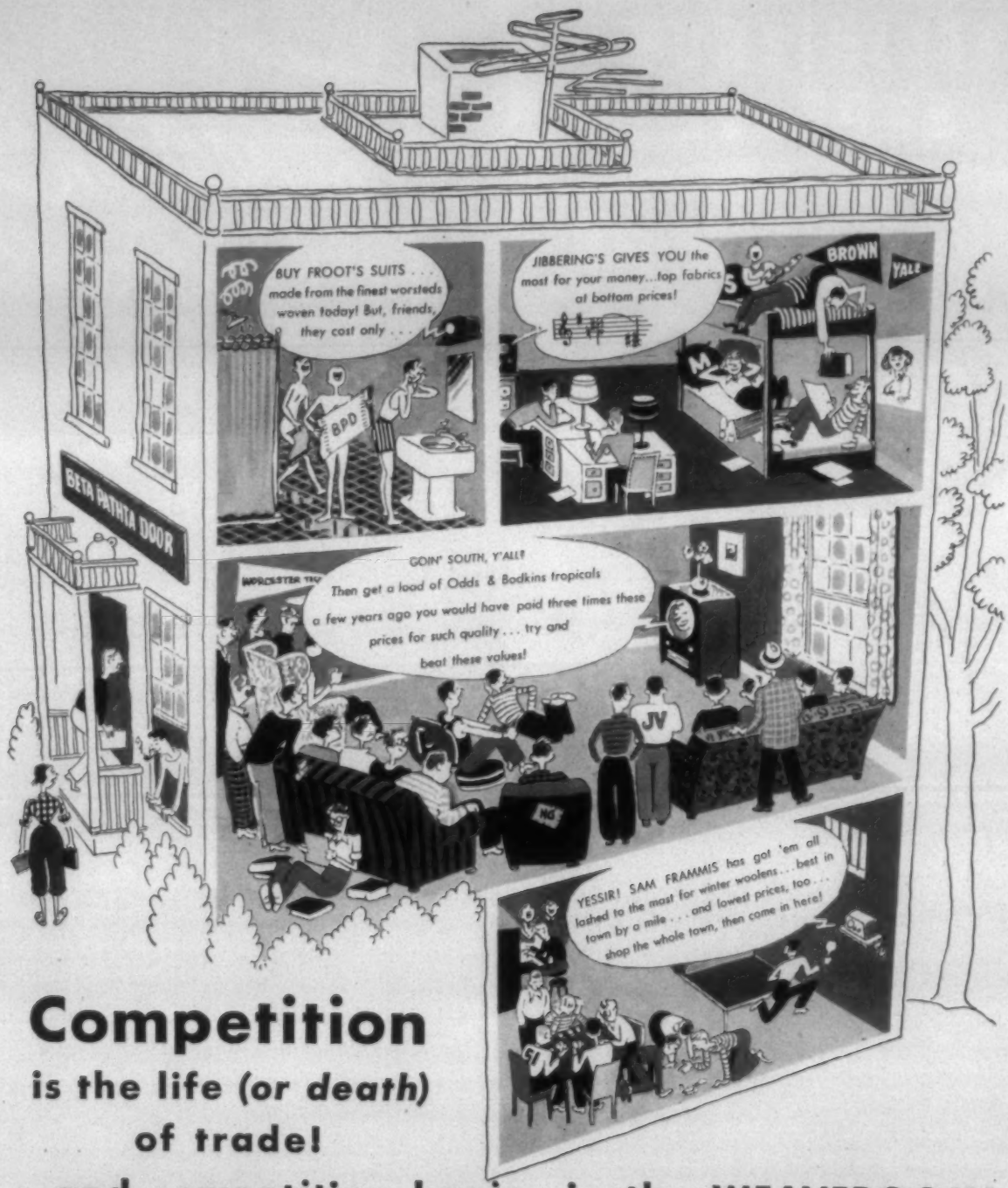
A complete account of the mechanical sampling device is contained in a report entitled "The Sampling of Cotton Bales as Related to Marketing." Copies are available from the Information Branch, Production and Marketing Administration, Washington, D.C., upon request.

New Cleaner For Roughly Harvested Cotton

Changes in cotton production machinery and practices have brought ginners new problems, especially in such matters as conditioning and cleaning. Research men of the U. S. Department of Agriculture, the cotton states, and the industry have recognized these needs. One of the results of studies in this field is described in the new Department Circular 858, "The Flow-Through Lint-Cotton Cleaner," a device to do a better cleaning job at the gin of mechanically harvested and roughly harvested cotton.

Authors of the new circular (Victor L. Stedronsky of the Bureau of Plant Industry, Soils, and Agricultural Engineering, and Charles S. Shaw of the Cotton Branch, Production and Marketing Administration) explain that in general such cotton, at the stage in which the seed is separated from the fiber, does not tolerate further cleaning without damage to the fiber. At the department's cotton ginning laboratory, Stoneville, Miss., where various processing devices and practices have been developed and tested, it was determined that if fiber clean enough to meet the demands of the mills was to be turned out, there would have to be further cleaning after separation of the fiber and seed. Accordingly, this new machinery was developed. It is installed between the gin and the compressor.

A copy of Circular 858 may be obtained from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.



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— A Review of the Literature —

Cotton Yarn Sizing Materials, Preparation and Practices

By W. E. SHINN, C. BOYCE SINK and MARY E. PARKER, North Carolina State College School of Textiles

Part One — Sizing Materials

IN our search for literature pertaining to cotton yarn sizing materials, preparation and practices, it was found that there are few books of reference and that most of the material available is in the form of magazine articles. The available references were reviewed and are summarized in this report, work for which was done under contract with the United States Department of Agriculture and authorized by the Research and Marketing Act. The contract is being supervised by the Southern Regional Research Laboratory of the Bureau of Agricultural and Industrial Chemistry. References (superior numerals) are listed at the end of this installment.

Corn Starch—Hart[6] states that "the corn starch granule is considered as a more or less homogeneous mixture of amylopectin . . . and a soluble adhesive known as amylose. . . . It is stated that corn starch has a tendency to mildew and to give a harsh stiff feel to the yarn.

"The viscosity of corn starch-paste decreases only slightly from its maximum upon continued boiling and agitation. One researcher reports that corn starch-paste begins to gelatinize at 83° C. and that there is a gradual increase in viscosity with temperature. On continued heating at 99° C., the paste . . . reached its maximum viscosity of 76 units . . . in 30 minutes and dropped to a viscosity of 69 units after two hours of heating. . . ."

Potato Starch—". . . Potato starch forms semi-transparent paste when boiled with with water. It produces a smooth pliable yarn but has a tendency to give 'soft' beams due to loss of strength. It is stated that one-quarter per cent to one-half per cent of caustic soda added to the weight of the starch will reduce this tendency to 'softening.'

"A similar series of experiments with potato starch [as with corn starch] gave a gelatinization temperature of 61° C., and . . . the viscosity continued to increase temporarily with the temperature. On continued heating at 99° C., it reached its maximum viscosity of nearly 13,000 units in 20 minutes. . . . The viscosity of the potato starch-paste decreased rapidly when the paste was heated and agitated. After two hours, under the conditions of the experiment, the viscosity became fairly constant . . . and was not much greater than that of corn or sweet potato starch-paste. . . ."

Sweet Potato Starch—Sweet potato starch has been used satisfactorily as a partial substitute for tapioca. "This starch was found to gelatinize at a temperature of 67° C. and to reach its maximum viscosity of 188 units in 30 minutes. . . . On continued heating at 99° C., the viscosity dropped to 149 units after two hours, and to 91 units after six hours. Like corn starch-paste, the viscosity of sweet potato starch-paste is not greatly affected by moderate agitation. . . ."

Tapioca—"Tapioca or cassava starch produces a very thin paste on boiling and, like potato starch, loses strength with prolonged heating. It finds a greater application in finishing than in sizing. It is stated that tapioca gives a soft mellow feel to the yarn. . . ."

Dextrines—"Dextrines in themselves have little value as size since it takes much more weight when compared with starch to impart equal strength to yarn; this extra weight tends to reduce the elasticity of the yarn still further. However, the strong adhesive power of dextrine makes it a useful adjunct to size to correct the loss of adhesiveness of the starch due to the presence of fat or oil."

Locust Bean Gum—"On boiling with water, locust bean or kernel gum gives a viscous neutral solution which may be used in sizing in combination with starch. Weak organic acids have little or no effect on the solution, but mineral acids lower the viscosity. Alkalies gelatinize the endosperm gel to a transparent mass. Salts which have no alkaline reaction mix well with it. Salts which tend to dissociate on dilution in excess cause flocculation. One part of this gum is said to be equivalent to seven parts of starch. It is also stated that this gum gives a smooth, transparent, tough, and non-scaly film of exceptionally good binding power and with little tendency to chafe or mildew. The amount usually used in sizing is between one-quarter per cent to three-quarters per cent on the weight of the starch."

Thin-boiling Starch—"Thin-boiling starches have proven advantageous over thick-boiling starches in shorter cooking time, added smoothness, and better penetration. Comparative tests . . . show that thin-boiling starch gives a greater increase in [yarn] strength and also in weight. . . ." This is particularly true for tightly twisted warps.

Algin-Protein as a Sizing Composition—U. S. Patent

2,430,180[1] describes a complex compound resulting from the reaction of algin and proteins. These products are used as sizing or dressing agents and also as stabilizing products for emulsions and the like.

Mukoseev[11] states that a textile size, equal or superior to the usual starch size, was made by replacing half of a 90-kg. batch of rye flour (in 700 l. H_2O) by 24 kg. gum arabic, heating nearly to boiling, adding four liters of a solution of castor oil 16.5, oleic acid 2.5, 20° Be. NaOH 7.5 in water 23.5 kg., and further adding one liter of oleic acid, boiling 20 minutes, and neutralizing with AcOH.

Morgan[10] traces the use of starches by the textile industry from the middle of the 18th Century. The thinning of starches as a means of securing a high concentration of solids in size mixtures is discussed. The use of roasted starches or dextrins is said to have begun about 1800. These were discovered by accident when some starch was burned accidentally in a fire. Roasted starches or gums thus were used to relieve a shortage of natural gums. The author describes an apparatus for testing the degree of pasting of starch mixtures. The apparatus is constructed to project a beam of light through a two-liter beaker in which the starch paste is being heated. The beam of light after passing through the starch paste is received by a photronic cell, and its strength indicated by a microammeter cell. The strength of the current generated is proportional to the translucence of the starch paste.

The method was employed to determine the pasting temperatures of various starches and starch derivatives. The order of pasting temperatures are: canary corn dextrins with 55-60 per cent solubles; dextrin with 32 per cent solubles; dextrin with 23.6 per cent solubles; dextrin with 16 per cent solubles; dextrin with 12 per cent solubles; 60 fluidity thin-boiling starch and raw corn starch.

Metallic Chlorides—"The deliquescent chlorides of calcium and magnesium find a wide application in the cotton industry as components of sizing and finishing mixtures. Their value lies in their ability to be applied as weighting materials which remain liquid under normal conditions of use and storage of cloth. It is also stated that the metallic chlorides exert favorable mechanical effects during weaving, which, however, have so far not been adequately explained. . . . One mill man states that metallic chlorides are frequently incorporated in warp-size mixes to add weight and pliability to the yarn, and however desirable to the weaver, they are detrimental to the finisher. . . ."[6]

Tendering Effect by Salts—"Certain metallic chlorides or sulfates used in sizing when exposed to high temperature may decompose, liberating hydrochloric or sulfuric acid. The injurious effect of hydrochloric acid on cotton is well known; it reacts by hydrolysis with the cotton cellulose, resulting in a loss of strength and ultimate disintegration of the fiber. . . . Upon treating cotton with various salts at 208° F. for one hour, it was found that magnesium sulfate did not do much damage, calcium chloride did much more, and magnesium chloride still more, while no serious injury was observed in the case of sodium sulfate, and chloride. . . ."[6]

Deliquescent Effect—"It has been found that both calcium chloride and magnesium chloride show inhibiting effects on the absorption of moisture when tested in combination with starch or on sized yarn. That is, sized yarn actually absorbs less moisture when the so-called deliquescent salts including glycerine, are present. . . ."[6]

Wengraf gives a digest of U. S. Patent 2,418,927[25] which covers a sizing material for cellulosic yarns for full-fashioned hosiery knitting. The patent cites the value of serecin on natural silk as a protective coat for binding the filaments together for silk hosiery knitting and points out the unsuitability of protein sizing materials for use on cellulose type yarns. The new size is described as a self-emulsifying mixture prepared by combining hydrogenated fat with a melting point of 60-63° C., stearic acid, bees wax, oleic acid, solid sodium hydroxide, and water. The size is applied at 40-60° C.

Newkirk[12] gives a short account of the manufacture, properties, and uses of (1) thick-boiling starch, (2) thin-boiling starches, (3) oxidized starches, (4) gelatinized starches, (5) British gums and dextrins, (6) glucose, and (7) starches used in coal washing and the like.

The Patent Digest[22] lists as the aim of the patent ". . . to change the properties of polyvinyl alcohol, making it less sensitive to water. . . . Polyvinyl alcohols give odorless, tasteless, transparent, and non-deteriorating films. They might be very useful for preparing sizes and finishes, but for their sensibility of water. . . ."

Walter[24] discusses (1) completely synthetic, cellulose-derivative, protein, pectin, oil-emulsion, oil-solvent, and starch and starch-containing sizes, respectively, (2) the sizing of wool yarns, wool mixture yarns, staple rayon, and staple rayon mixture yarns, cotton, and rayon, and (3) the diastatic desizing agents pancreas amylase (commercial products: Degomma, Tissoferm, and Diastonal), bacterial amylase (commercial products: Biolase, and Desizing Agent B4), and malt amylase (commercial products: Diastafor and Terhyd MA).

Shinn and Biggers[21] experimented with the use of methyl cellulose, a water-soluble cellulose ether in warp sizing spun viscose yarns for weaving. The type selected for study was a high-viscosity type 100 cps (Dow Chemical Co.) Basic studies were conducted with the material used as a thickening agent in a paste in which a corn gum formed the principal adhesive agent. The methyl cellulose was also used alone as the adhesive substance. It was found that the ether alone produced a sized yarn with the highest abrasion resistance and resulted in weaving with the lowest end breakage. The addition of ten per cent of the ether to the corn gum paste increased the relative viscosity and caused a reduction in end breakage in weaving.

Permanent Sizing—"Permanent warp-sizing materials to replace starch have been found and evaluated by the Institute of Textile Technology. . . .[13]

"Of 43 materials and combinations of various materials tested, four were found to have satisfactory mildew resistance and qualities which might make them acceptable as warp sizes. The recommended sizes are Dow's Carboxymethocel A (CMC-A), Monsanto's Stymer, Rohm & Haas' RHoplex MR, and American Cyanamid's Aerotex 625."

"CMC-A: Dissolve a low viscosity grade of CMC-A in 0.35 pound of 28 per cent NH_3 solution per pound of CMC-A. A concentration of five per cent CMC-A will probably be found the maximum that can be used, because of the viscosity. An alkali-stable wetting agent should be used in the bath. Box temperature can be room temperature, or slightly higher. Elevated temperature will drive off ammonia. Size pick-up should be about five per cent of the

weight of the dried yarn. Weaving should be at not over 65 per cent relative humidity. Above this, the size may absorb water and become soft and swollen.

"Stymer: Dissolve in about one pound of 28 per cent NH_3 solution per pound of Stymer. Instructions from the manufacturer called for five per cent ammonia solution. However, runs have been made with as low as 0.65 pound of 28 per cent solution per pound of Stymer. A concentration of five per cent Stymer will probably be found the maximum that can be used, because of the viscosity. Stymer V-30 was used on this project. The box temperature may be up to about 50° C. Size pick-up should be about five per cent of the weight of the dried yarn.

"RHoplex MR: Dilute the 50 per cent emulsion to ten per cent, with water, while agitating. Box temperature can be from room temperature to about 50° C.

"Aerotex 625: Dilute to ten per cent, with water, while agitating. It is believed desirable to raise the pH from its original value of four to six or seven. This can be done by careful addition of ammonia solution, with agitation, just before using."[18]

From photographs of the sized yarns, the Stymer (six per cent size) appeared to give the smoothest yarn.

Shinn and Biggers[19] carried out experimental work in the application of a corn starch ether gum in spun viscose warp sizing. The principal advantages claimed by the producers of the adhesive were a high degree of solubility and flexibility and softness in the sized yarns. The material was supplied as a solution containing 25 per cent solids with a pH of eight and a relative viscosity of 11.2 at 90° C. The material was applied without softeners or other assistants. A relatively soft "handle" was produced in the fabric and the size was easily removed with hot water. Simultaneous desizing and dyeing with direct colors was accomplished.

Farbenind experimented with sizing textile fibers by treatment with polylvinyl alcohol both alone and with a sulfonated oil and the usual additions for sizing such as oil, fat, wax, etc.[23]

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Processing Fiberglas Yarns Into Industrial & Decorative Fabrics

LATEST approved techniques for processing Fiberglas yarns into decorative and industrial fabrics are described by Owens-Corning Fiberglas Corp. as working information for weavers and other technicians in the mill trade. Harry E. Mahler, manager of weaver's sales and service in the company's textile products division, said the process data reflects laboratory and field experience built up during recent years by Owens-Corning research men, field technicians and mill trade customers.

Development of the Coronizing process in Owens-Corning's textile research laboratories at Ashton, R. I., Mr. Mahler said, has been of principal importance in increasing performance standards of Fiberglas fabrics, particularly for decorative end-use. J. Kenneth Park is manager of research and development for textile products in Ashton. Research men serving under him include: Max Steiner (woven fabrics), and Raymond F. Caroselli (Coronized fabrics).

To understand the processes employed to weave glass yarns for decorative or industrial end-uses, one must first be familiar with the Fiberglas yarns themselves, Mr. Mahler said. The basic continuous glass filament used has a diameter of about .00025-inch. By comparison with filament rayon, this is approximately a half-denier on a yards per pound basis. Due to the higher specific gravity of glass yarn, it is approximately a quarter-denier on a diameter comparison. This condition has to be considered in designing yarns and fabrics of glass.

Strands of 102 and 204 glass filaments are drawn in the forming process. The strand with 102 filaments is called No. 900 size and has a nominal yardage of 90,000 yards per pound. The strand with 204 filaments is called No. 450 size and has a nominal yardage of 45,000 yards per pound or the equivalent of approximately 100-denier in yards per pound and 60-denier on a diameter basis. Strands with larger diameter filaments are also used for industrial and decorative fabrics. A "binder" on size is applied during

forming to bind the filaments together and protect the bare glass during subsequent operations. The percentage of lubricants, slight twist contraction and necessary manufacturing tolerances lower the yards per pound a few per cent.

The filaments are actually, extremely fine and highly flexible glass rods, and for all practical purposes do not have any stretch as far as textile manufacturing is concerned. They do not absorb moisture; consequently glass yarn cannot be "twist-set." As few as two or three turns per inch in the single yarn makes it too lively for efficient handling in warping and weaving. It is necessary to balance the yarn with two twisting operations. Generally, this is done by using a slightly higher twist in the first operation using "Z" twist and plying with "S" twist to balance the yarn. The yarn is built up to the desired size by twisting and plying a minimum of two or more strands with the desired turns per inch according to end-use of fabric. Plied yarn is sold ready for warping and weaving without further treatments or sizing necessary.

The requirements for handling of glass yarn on warping, quilling and weaving equipment are basically as follows:

(1) It is akin to handling of other fine filament yarns, requiring up-to-date equipment for best results. (2) The non-stretch characteristic of glass yarn makes it particularly important to produce warps with uniform tension, as there is no equalizing stretch left in the yarn once it is in the loom. (3) Smooth finish on surfaces of guides, rods, heddles and reeds are important to avoid abrading the yarn. (4) Clean equipment is necessary throughout, to produce stain-free yardage. This is particularly important when the fabric is to be used for decorative material, since Coronizing and finishing require clean fabric for best results. (5) For mills interested in weaving glass yarn, it is recommended a training period be held to give their people "the feel" of glass yarn. Technical assistance may be obtained by contacting Owens-Corning's weaver sales and service division, 16 East 56th Street, New York, N. Y.

Warping

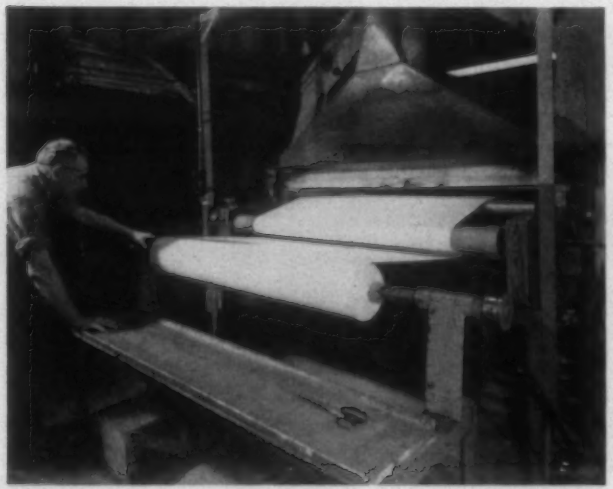
The modern horizontal warper and creel with whirl or disc-type tension is particularly suited for warping of glass yarn for decorative or industrial fabrics. Warping is generally done with 400 to 600 ends per section or band, at a speed of 200/250 yards per minute. Risers or elevators should be accurately set according to size of yarn used. Sections or bands must be joined accurately. When beaming down from the mill it is important to avoid build-up at the beam flanges. Sufficient tension must be applied to obtain a solid beam. Beam flanges must be smooth. For large scale production, the warps can be made by direct beaming for some constructions.

View of a standard high-speed automatic Draper loom weaving a continuous-filament Fiberglas fabric in the Ashton, R. I., plant.

Weaving

Looms developed for weaving of rayon and other filament yarns are recommended for weaving of continuous filament glass yarns, such as Draper YK and XD and Crompton & Knowles S-5 and S-6. These looms are equipped with the larger take-up roll which should be covered with rubber, cork or some comparable covering to prevent slipping of the cloth. Split or lease rods should have a smooth surface, such as found on chrome-plated brass rods. Standard flat steel heddles with oval shaped eye are satisfactory, but stainless steel heddles are now recommended for longer life. Standard reeds with semi-oval and oval dents can be used, but stainless steel reeds are preferable for longer life and easier cleaning.

For the weaving of glass leno fabrics, it is recommended to use the inverted top and bottom doup steel heddles. This



A Sipp-Eastwood creel and warper being used for warping Fiberglas yarns.

Gray Fiberglas fabric being fed into Coronizing oven where fibers are heat-set in crimped position. This picture was taken in the Owens-Corning Fiberglas Corp. textile products division plant at Ashton, R. I.

leno harness equipment is easier on the yarn and does not require the jumper motion. On lenos it is also preferable to use a finer reed and skip a dent to reduce air space and possible reed marks. Heddles should move freely on the harness frame and be evenly distributed.

To further ease strain on non-stretchable glass warp yarn, it is recommended to have the whip roll mounted on springs (Durkin preventer) which is similar to a "knee action." Full front center is recommended for harness time with as little power as possible on the pick motion. Dutcher temples with rubber rolls and post temples, which are also called "crowhops" or "smash eliminators," are recommended for fabrics which have a tendency to pull in at the selvage edge. The post temples have the function of easing the pressure of the filling on the outer selvage yarns.

For weaving continuous filament glass yarn, a smooth surface covering of the race plate is best, such as felt for continuous yarns and metal for staple or combination yarns. Adhesive tape, gummed kraft paper or Scotch tape can be used to good advantage. Standard shuttles can be used and furring is recommended for continuous filament glass yarn.

Looms must be in first-class condition, without lost motion in crank arms, drive shaft and dobby head. The looms can be run fully automatic with speeds from 140 to 170 picks per minute, depending on yarn count and construction.

Quilling and Humidity

Continuous-filament glass yarn can be wound on any type quiller used for other continuous-filament yarns, automatic types included. A relative humidity of 68 to 70 per cent is recommended. This is particularly desirable in mill preparatory departments such as warping and quilling, where Fiberglas yarns are packaged.

The most important operation, in fabricating Fiberglas yarns into fabrics and tapes, is warping. It is imperative that uniform tension is maintained throughout this operation to warrant satisfactory weaving conditions and quality.

SO YOU WANT GOOD CLOTH!

By FRANK D. HERRING

Part 20 — Loom Stoppage

WHEN a loom fixer is called to a stopped-off loom to work on it, he can readily determine if the loom has slammed off because, if so, the protector rod daggers will be in tight contact with the frog steels. But very often he will be called to work on a loom which is stopping off when there will be no apparent cause for it, and sometimes it is difficult to find the cause for the stoppage. These stoppages usually originate from the filling fork or the warp stop motion. To correct the trouble, proceed as follows: Notice the exact location on the lay where the shuttle has come to rest when the loom was stopped off. Start the loom and then stop it off, by hand, from the filling fork, and if the shuttle stops in the same place it is very obvious that the trouble is coming from the filling fork. In this event turn the crank arms to bottom center position and check (adjust, replace if necessary, and securely tighten the parts involved) the rocker shaft, the rocker shaft boxes, the swords, the parallels, and the rocker shaft collars.

If the rocker shaft has more than an eighth-inch play up and down, it should be considered excessive, and something done to remove this lost motion. The rocker shaft always becomes worn on the bottom, and never on the top, as the swords, the lay and its component parts are supported by the rocker shaft. This lost motion can be removed by turning the rocker shaft one half turn and then sliding it a half-inch lengthwise, provided the shaft has not already been turned; in this event the shaft should be replaced with a new one (a Stillson wrench is a good tool for turning the shaft). When the rocker shaft has been turned or replaced the fixer should always check the transferrer in relation to the bobbin in the shuttle, the filling feeler in relation to the bobbin in the shuttle and the temples in relation to the race plate, as the turning or replacing of the shaft will raise the lay and all its component parts and throw them out of adjustment. Sometimes the lost motion is caused by the rocker shaft boxes being worn; in this case they should be replaced. The rocker shaft boxes are secured in place by two bolts and two dowel pins, and the dowel pins should never be left out, as the bolts alone are not sufficient to hold the boxes in place.

The swords are mounted on the rocker shaft and should be kept tight at all times while the loom is in operation. If the swords are loose on the shaft, the shafts and the swords will become worn and allow the lay to be lowered out of correct position, same as a worn shaft and shaft box, and when the lay is lowered the strand of filling extending from the shuttle will pass underneath the filling fork prongs and fail to raise the fork loop, and this will allow the fork loop to contact the filling motion hook and thereby stop the loom off. The parallels and the rocker shaft collars are mounted on the rocker shaft, and while the fixer is working on the rocker shaft it is just good preventive loom fixing to check them. When the swords are loosened for any reason, the lay should be checked for correct position before being tightened (the positioning of the lay is carried out by using the gauge No. 4 shown in Fig. 58, September, 1950, issue of TEXTILE BULLETIN).

Turn the crankshaft, placing the lay on front center position and check the filling fork slide stand, and make sure that it is positioned so as to allow the fork prongs to extend far enough through the openings in the fork grate to assure the proper action, or raising, of the fork loop to prevent it from contacting the filling motion hook and stopping the loom off. The fork prongs should never be bent, backwards or forwards, as this will throw the entire assembly (prongs, loop, the prong and loop holder) off balance and prevent

the proper functioning of them. Check the filling motion hook for wear. If the hole in the hook becomes excessively worn it will allow the hook to move backwards and forwards while the loom is in operation and this will sometimes allow the hook to contact the loop before it has been raised by the strand of filling contacting the fork prongs, and this will stop the loom off. With the lay still on front center, check the timing on the filling motion cam. If the filling cam is timed too early or too late both will sometimes cause the loom to be stopped off. If it is timed too early the hook will sometimes contact the loop before it has been raised, and if timed too late it will sometimes allow the loop to be raised and drop back down in time to contact the hook.

With the lay still on front center, check the filling fork grate and make sure that it is raised as high as possible to allow it to just clear the fork prong and loop holder. If the grate is too low it will sometimes cause the loom to be stopped off by the strand of filling extending from the shuttle contacting the fork prongs above the top of the grate. This usually happens on the first pick after a new bobbin has been transferred into the shuttle, since the strand of filling on the first pick after transfer will contact the fork grate at a higher point than it does after the filling strand has become threaded in the shuttle eye and lowered to its proper running position. The shuttle eye becomes fully threaded on the second pick after the transfer has been made. The shuttle improperly boxed, or bouncing, in the left-hand shuttle box will sometimes cause the loom to be stopped off from the filling fork, because the strand of filling will be slackened at the point of contact with the fork prongs and the grate, and the fork loop will not be raised sufficiently to clear the filling motion hook.

Insufficient tension of the strand of filling extending from the shuttle will sometimes cause the loom to stop off, because unless the filling is held reasonably taut by the friction bristles it will cut some unimaginable capers, and will sometimes become completely unthreaded. And in this event it will contact the grate and fork prongs in the wrong place to raise the fork loop properly.

Turn the lay about two inches back from front center position and check the fork prongs in relation to the lay. The bottom ends of the prongs should clear the lay one-eighth of an inch. If it is found that the prongs are too high, or too low, this condition can be remedied by removing the filling fork side stand and filing the bars to raise or lower the prongs. If the prongs are too high or too low it will sometimes cause the loom to be stopped off from the fork.

If it is determined that the loom is not being stopped off by the filling fork, then check the warp stop motion by stopping the loom off with a drop wire held in hand, and if the shuttle comes to rest at the same place it was found it is good indication that the trouble is caused by the stop motion. In this event, proceed as follows: Check the harness setting and timing. If one or more of the sheds are too low it will allow the warp threads to become slackened, and allow the drop wires, which are supported by the threads, to drop down low enough to stop the loom off. If the harnesses are timed too late it will prevent the proper interlacing of the warp and filling yarn, and this will cause the cloth to sag back, or slacken at the point of the beat; this also will allow the drop wires to drop low enough to make contact and stop the loom off. Next, check the timing on the stop motion cam. If the cam is timed too early or too late it will cause the knock-off mechanism to make contact and stop the loom. If the above checks do not remove the trouble it would then be wise to check all moving parts of the stop motion, beginning at the cam and following through to the knock-off. This will eliminate the trouble if it is caused by the warp stop motion. The above applies to mechanical stop motions, but on electrical stop motions the problems are somewhat different. Of course, slack warp threads which permit the drop wire to drop low enough will stop the loom off just as on the mechanical stop motion, since the contact which completes the electrical circuit comes from the drop wire.

Shown in Fig. 64 is the drop wire and drop wire bar used with the electric warp stop motion. This shows the wire and the bar in running position, and supported by the warp thread which passes through the hole in the drop wire below the bar. The drop wire bar has a small bar inserted into it, and this small bar is insulated from the drop wire bar by a non-conductive material. When the loom is in operation the current is on both of these bars, so when the thread is sufficiently slackened, or broken, the drop wire will drop down and contact both bars and thereby complete the electrical circuit which manipulates the knock-off mechanism and stops the loom off, as shown in Fig. 65. Sometimes the insulation between the bars will become broken, allowing the two bars to touch each other, and in this event the bars will have to be replaced. The thing which usually causes this insulation to be broken is unnecessary bending of the bars. But very often—too often—the loom fixer will remove a drop wire bar which is making contact and stopping the loom off, thinking the insulation has been broken, when the trouble actually is caused by the small inserted bar being warped or bent, and projecting far enough out of line to make contact with the drop wire. When the electrical contact is being made between the drop wire and the bar, stopping the loom off when there is no drop wire down, the fixer can locate the position of the contact by holding down the contact box knock-off lever by hand, and allowing the loom to run while he locates the exact position where contact between wire and bar is being made, and if he will then closely examine the inserted bar at this point he will usually find that this bar has become bent, and this can easily be repaired by the use of a pair of pliers, and thereby avoiding the replacement of the bar with a new one. Of course, after long usage, the drop wire bars will become worn down on each side to a point where they are

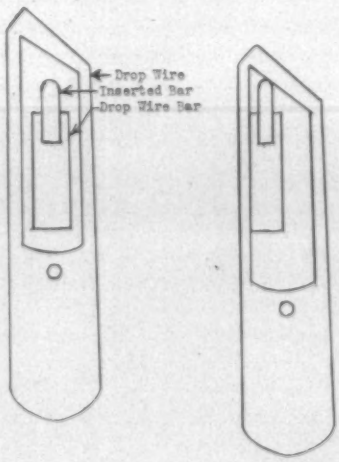


Fig. 64.

Fig. 65.

Fig. 66.

too thin to hold the drop wire away from the contact bar, and in this event it is necessary to replace the bar. Fig. 66 shows the inserted bar bent out of line, and making contact with the drop wire.

Things other than the filling motion and the warp stop motion will cause the loom to stop off occasionally without any apparent cause, and if it is determined that the loom is not stopped off from filling motion and stop motion troubles proceed as follows to locate the trouble: First, pull the shipper handle on in running position and check to determine if it held in place securely. If the handle is not held firmly, but has a tendency to slowly move back in off position it is a sure indication that some part (or parts) of the shipper motion is out of proper adjustment, and the remedy for this is to check the shipper motion all the way through from the shipper handle back to the drive pulley, or friction disc gear. The later-model looms are equipped with what we refer to as the easy shipper motion. This motion is so designed as to lock the shipper handle in place when it is pulled on in running position. This is a very simple arrangement, and if not working properly, the above check should readily show up the trouble.

The older types of shipper motions are also very simple arrangements, and the things which cause them to stop the loom off while loom is in operation are the following: shipper handle bracket slipping out of proper adjustment, or becoming excessively worn at the point where the handle is attached; excessively worn shipper handle at the points of contact with the shipper bracket or the shipper lock; and excessive wear on the shipper lock at the point where the handle is held in place in running position. Any of the above-mentioned faults will cause the shipper handle to slowly move out of position, and stop the loom off. If the shipper lock is worn off and allowing the handle to move out of running position, it can be fixed by filing the rounded off portion without removing the lock from the loom, but if the shipper handle is excessively worn it must be removed and repaired, or replaced with a new one. This also would apply to the shipper handle bracket.

We refer to a loom tipping off whenever the protector rod daggers are not raised sufficiently for them to clear the frog steels. As a rule this will not happen unless the points of the daggers or the sharp point of the frog steels become worn or rounded off at the points of contact. If these points of contact are not excessively worn the daggers will not slip over the steels, but will become locked on contact and cause the loom to slam off. When it is determined that the loom is tipping off, check the following things: the points of the daggers, the frog steels, the protector rods, protector rod fingers, shuttle boxes, pick motion, and the speed of the loom. If the daggers or the frog steels are worn rounded, they should be replaced. If the protector rods have too much lost motion this should be corrected by filing the protector rod caps, or replacing both the caps and the protector rods. Lost motion in the protector rods will not allow the daggers to be raised high enough to clear the frog steels, even though the shuttle is properly boxed and every other part involved is properly adjusted. The same can happen if the protector rod fingers are not properly set. The protector rod fingers should be in contact with the leather piece on the back binder at all times, and should also be adjusted so as to support the protector rod and keep the protector rod daggers raised a sufficient height so that they will clear the frogs. Allowing the protector daggers to drag on the frogs is just plain bad loom fixing, as well as bad supervision. It will wear the frogs, and also wear and round off the points of the daggers. Next, check the shuttle boxes to determine if the front and back binders, the binder springs and the pickers are in good condition, and see that the protector rod daggers are raised high enough to properly clear the frog steels when the shuttle is all the way up in the box.

Check the pick motion in the following order: the picker stick, the parallel shoe, the parallel, the pick arm, the pick shaft, the pick ball, the pick cam. If the picker stick has become weakened by wear, or cracked, or split, this will weaken the power on the pick and can cause the loom to tip off. After the above checks have been made, turn the crank arm to place the pick ball on the highest point of the pick point, and see that the picker stick has the proper stroke, or throw. Do this on both ends of the loom. Then check to determine if the pick is properly timed, also do this on both ends.

I use the phrase "preventive loom fixing" and also the word "check" very, very often. I do this because I have learned the real value of these things. And I contend that the loom fixer is the one to be trained to do this checking and preventive loom fixing, because the loom fixer is the only one who has the chance to do this checking while the loom is stopped off. It cannot be done properly and effectively while the loom is running. It will require very little of the fixer's time to do the checking, and he will save many minutes over the time spent in doing so by making corrections which he will find necessary before these many minor things multiply into many more and much bigger jobs.

Most loom fixers, in fact most people, are prone to seek the point of least resistance in their work. I do not mean this as a condemning statement, because I think one is due to be commended by trying to learn to do more effective, time-saving work on the job. By doing so one will become a much more contented employee and thereby a much more valuable employee to the employer.

So You Haven't Got Good Cloth!

FABRIC DEFECTS: Case Histories of Imperfections in Woven Cotton and Rayon Fabrics, by Julius B. Goldberg, research director for J. P. Stevens & Co., Inc. ($6, McGraw-Hill Book Co., 330 West 42nd Street, New York City).

The possible cause of almost every conceivable type of defect which might appear in woven cotton and rayon fabrics is described in J. B. Goldberg's recently published book, *Fabric Defects.* Some 200 case histories are presented, with information about the construction of the fabric, the finish, the nature of the defect, and results of the analysis made to determine the cause of the defect. It is evident that these analyses were carefully conducted and a great variety of chemical, physical, and microscopic examinations were used to insure accurate diagnosis of the trouble. There are numerous excellent photomicrographs which aid in demonstrating the nature and cause of the defects.

The book also includes valuable general information about the various factors in the raw materials and textile mill manufacturing operations which might cause defects. There are separate chapters covering the yarn manufacture, warp preparation, and weaving of cotton or synthetic staple

gray fabrics; man-made fibers and yarns; dyeing and finishing; and garment manufacturing.

In addition, there is a very adequate explanation of the technique, personnel, and equipment recommended for the investigation of fabric defects, and considerable miscellaneous information of interest.

The clarity, accuracy, and thoroughness in this book are outstanding. No attempt is made to suggest or recommend the cure for defects in fabrics, but the volume should serve as an extremely valuable reference and be of great assistance to any producer or consumer of fabrics in search of a way to eliminate all imperfections.—*B. F. Whittier.*

Fiberglas Bibliography Made Available

Publication of the third edition of the *Fiberglas Bibliography*, a volume of annotated references to selected articles which have appeared in the nation's press, has been announced by Owens-Corning Fiberglas Corp. Copies of the bibliography are being sent to more than 400 libraries in major cities, colleges and universities, and to several listing and library services. The bibliography is available without charge to engineers, technologists, research investigators, and college and university students on request to the Public Relations Director, Owens-Corning Fiberglas Corp.

The first and second editions of the bibliography were published in 1945 and 1946. The second edition listed 393 references to material in 208 publications, the third lists 710 references to articles in 338 publications. The bibliography is of 88 pages and contains indexes of publications cited, authors and applications and uses.

Draper Takes Defense Production Order

Draper Corp., Hopedale, Mass., manufacturer of automatic looms, has entered into an agreement with the Bryant Chucking Grinder Co. of Springfield, Vt., to manufacture complete internal grinders on a limited basis. Delivery will begin in June. The schedule of loom production will naturally be revised to a certain extent, according to Draper officials. It will be remembered that Draper Corp. built a large number of Bryant internal grinders during World War II.

Bleaching, Dyeing & Finishing

RAIN-GROWN AND IRRIGATED COTTONS: A Comparison Of Their Differing Dyeing Characteristics and Related Properties

By HENRY A. RUTHERFORD, Head, Chemistry and Dyeing Department, North Carolina State College School of Textiles

IN THE past few years, the economic importance of cottons grown in the Southwestern part of the United States on irrigated lands has increased considerably. These so-called "irrigated" cottons, however, have consistently sold at a discount relative to comparable qualities of rain-grown cottons because of difficulties encountered in the wet and dry processing of the former. The principal difficulties found in dry processing are somewhat higher nep content and the necessity of changing processing conditions in opening, picking and carding in order to maintain product quality. With regard to wet processing there have been some reports, as yet unsupported by experimental data, of difficulties encountered in bleaching and in finishing operations; however, there is no doubt that a real source of trouble exists because of the different dyeing characteristics of the two cottons. As a matter of fact, some mills have made efforts to eliminate the irrigated type for this reason. Usually the rain-grown cotton dyes a fuller shade than a comparable quality of irrigated cotton dyed in an identical manner. It is thus obvious that mills using both types of cotton may frequently be confronted with a problem in obtaining even shades within a lot, or from batch to batch.

Conceivably, there are a number of reasons why such differences in dyeing characteristics might occur. For example, the lighter shade in the irrigated cotton could be caused by the absorption of a smaller amount of dyestuff; distribution of dyestuff within the fiber, e.g., whether it is surface dyed or completely penetrated, also influences depth of shade. Another possibility has to do with the nature of the fiber surface and reflection of light from it. One illustration of this is the color change which apparently occurs in pile fabrics when the direction in which the pile lies is altered. In this investigation a study was made of the chemical properties and other aspects of the two types of cotton which may have a bearing upon their apparent differences in processing and dyeing.

At the outset it was recognized that any differences between irrigated and rain-grown cotton could not necessarily be ascribed only to the manner in which the two received water for growth. It is well-known that variety of seed,

temperature, sunlight, type of soil, as well as other factors influence the quality of cotton, and that differences among the rain-grown types and the irrigated types themselves are frequently found. However, there is a universal opinion among mill men that with many dyestuffs irrigated cotton dyes differently than rain-grown cotton when processed identically and care must always be taken when the two are being used in the same plant. Similar objections are not ordinarily raised when different rain-grown types are employed. In preliminary work on this problem several types of irrigated and rain-grown cotton were examined and the general opinion as to the difference between rain-grown and irrigated types was confirmed experimentally; the rain-grown cotton dyed a darker and a fuller shade than the irrigated. For these reasons, the fact that only one typical cotton of each kind was chosen for this work is not regarded as a serious objection.

Cottons

The two cottons used in this study were both from the crop of 1947. The irrigated cotton was Acala 4-42 grown in the San Joaquin Valley in California, and the rain-grown cotton was Deltapine P14 grown in Arkansas. Widely accepted experimental procedures were employed in all of the work. It can further be stated that the cottons were practically identical in grade, staple length, fineness, maturity, wax content, and pectic substance. Of particular interest is the fact that the maturities, as evidenced by the caustic soda method, were identical. Differences were noted in ash content and hot water-soluble material. It is true that if these cottons were dyed in the raw state, these dissimilarities may be of some significance. However, because of the fact that both cottons after scouring and bleaching and therefore freed from the major portions of their natural impurities, still exhibited just as much difference in dyeing, it was a reasonable assumption that the cause of their different dyeing behavior would have to be sought elsewhere.

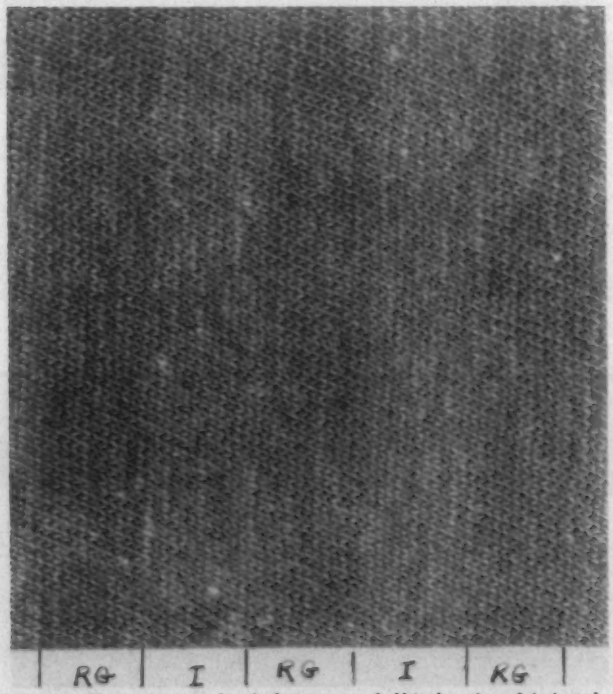


Fig. 1—Knit tubing made of alternate one-half-inch strips of irrigated (I) and rain-grown (RG) cotton dyed with a naphthol dyestuff (Naphthol AS-SW; Red Salt BN). The dark strips are rain-grown cotton and may be seen at all angles of view.

Chemical Properties

One of the most important factors influencing the behavior of cellulosic materials during wet processing or chemical treatment is the fine structure of the fiber. The length of the cellulose chain molecules, their degree of orientation along the fiber, and the extent to which they are packed in the fiber structure are well known to influence both physical and chemical properties. Penetration of foreign substances, such as dyestuffs, can occur only in the so-called "accessible" or "amorphous" regions of the structure, while the areas in which the cellulose chains are tightly packed, i.e., the "crystalline" portions, are impervious to substances having even a small molecular size. Bearing these considerations in mind, a difference in fine structure would obviously be a first guess as to a reason for the difference in dyeing characteristics between rain-grown and irrigated cottons. This aspect was therefore carefully considered.

The degree of polymerization (DP), which is a measure of the average length of the cellulose chain molecules, involved the determination of the fluidities in acetone of cellulose nitrates prepared from the cottons under conditions known to produce little or no degradation. It was found that the DP of the rain-grown cotton was considerably higher than that of the irrigated type, both initially and after various physical and chemical treatments. Whether the initial differences in DP of the two cottons could account in part for the differences in dyeing properties was not definitely known, but it is believed that this factor could hardly have been a significant one in bringing about the shade differences observed in the relatively undegraded cottons being examined.

By means of appropriate experiments and utilizing well-established analytical procedures, it was further determined that there was no appreciable difference in the accessibility or crystallinity of the two cottons. The foregoing as well as the results of many experiments not mentioned, may be summarized by stating that differences in physical and chemical properties of the two cottons could not account for the differences in dyeing characteristics.

Dyeing Characteristics

Rain-grown and irrigated cottons may show distinctly different shades when dyed together, i.e., in the same bath; the difference is a general one and not confined to a single class of dyestuffs was found by making direct, vat, sulphur, and naphthol dyeings on the two cottons. Each showed differences in shade in varying degrees. Cross sections of all the dyed fibers concerned gave no indication that there was any appreciable difference in location of absorbed dye which could account for the shade differences observed.

In order to determine whether the affinity for dyestuff of the two fibers was actually different, whatever the cause, two types of experiments were conducted. The first consisted of actually measuring spectrophotometrically the amount of dye absorbed, taking into account the amount lost in the rinsing operation. Briefly, it was found that both cottons absorbed 2.8 mg. of dye per gram of cotton. Even though these two cottons contained practically the

same amount of dye, the rain-grown still showed a deeper shade than the irrigated.

In the second experiment, a parallel series of exhaust dyeings was made on skeins of rain-grown and irrigated cotton using vat, sulphur, and direct dyestuffs. This exhaust series was continued until so little dyestuff was left in the bath that when a fresh set of skeins—usually about the fifth set—was entered and dyed, only a very light tint was produced. Examination of all the skeins showed that in every case after dyeing, the rain-grown came out slightly fuller than the parallel dyeing on the irrigated cotton. If the former type of cotton had been absorbing more dye from solution than the latter, then at some point in the series the effect should be reversed and the irrigated cotton should begin to appear heavier than the rain-grown. *No such reversal took place.* Thus, differences in affinity as a cause of the depth differences in the cotton can be ruled out.

Reflectance Properties

The conclusion must be reached that these two cottons, of very similar physical and chemical nature, can contain the same amount of dye, distributed throughout the fiber in about the same way, and yet not look alike. By elimination, the solution to this puzzle seems most likely to lie in the surface reflectance properties of the two cottons. This hypothesis is strengthened in a number of ways. As one outstanding example, when knit tubing consisting of alternate one-half-inch transverse stripes of rain-grown and irrigated cotton is dyed with Indanthrene Blue BCSN Double Paste, the stripes show plainly *only* if held at the proper angle with respect to the viewer and the illuminant, in other words, only if the reflectance conditions are just right. This may readily be demonstrated by holding, with arms extended, the strip of dyed tubing in an opproximately horizontal position slightly below eye level, then gradually lowering the sample in an arc to an angle of 45 to 60° with the horizontal. Depending upon the conditions of illumination, stripes will appear at about this angular position in a greater or lesser contrast. With the dyestuff in this example the difference between the two cottons is dependent upon viewing conditions. Other dyestuffs show the difference well under almost all viewing conditions, but it is accentuated when they are ideal.

Reflectance properties of this type are undoubtedly closely related to luster which is essentially a phenomenon of contrasts between bright or highly reflective areas and duller backgrounds; the magnitude of the luster observed is dependent upon the angle of view. Further, it is well-known that dyed shades appear brighter in lustrous textiles. It has also been shown experimentally by Rose that mercerized cotton by virtue of its luster *alone,* appears heavier than unmercerized cotton.

With the above considerations in mind, luster measurements were made on undyed and dyed cottons in yarn and tubing form using the Hunter-Gardner Goniophotometer. This instrument permits the quantitative measurement of reflection at various angles of view and illumination, thus affording a controlled method of evaluating reflectance properties and eliminating some of the many variables inherent in visual comparisons. The results showed clearly that there is a real and considerable difference in reflectance properties between yarns spun from rain-grown and from irrigated cottons.

The differences between alternating strips in the dyed tubing are more conspicuous in some conditions of viewing than others. This in itself is good evidence that the difference is an optical one. To go a step further, it was demonstrated that by changing the optical conditions in certain ways the effect may actually be *reversed*. Specifically, with overhead (perpendicular) illumination the rain-grown cotton appears darker than the irrigated, regardless of whether the viewing direction is parallel to the stripes or parallel to the tubing. If, however, the illumination is glancing and parallel to the tubing, i.e., perpendicular to the strips, the effect is reversed and the rain-grown becomes lighter than the irrigated, again regardless of viewing direction. Bearing in mind that in the samples of tubing being examined the yarns of both types are held at strictly comparable positions relative to each other, the fact that reversal takes place as just described, can be regarded as conclusive evidence that the differences in depth of shade observed in these two cottons is directly related to reflectance properties.

The effect of mercerization may be taken as further support of this conclusion. It has been reported by Goldthwait and Smith, and confirmed in this investigation, that mercerization eliminated or very considerably minimized the differences in dyeing properties of rain-grown and irrigated cottons. This was illustrated by the use of dyed yarns made from rain-grown and irrigated cotton before and after mercerization. When the dyed yarns were mercerized, they not only became darker, but the shade difference between the cottons dissappeared. The fact that mercerization, which so definitely affects surface reflectance, can almost eliminate the dyeing difference between the cottons, plus the actual reflectance data obtained, suggests a novel explanation for the behavior of these two cottons in dyeing, namely, that reflectance from dyed fiber surface is the most important single difference in rain-grown and irrigated cotton, and is chiefly responsible for their apparently different dyeing properties.

Summary and Conclusions

A comparison of the dyeing characteristics and related properties of rain-grown and irrigated cotton has been made. Comparative analyses of the two cottons were made with regard to: metallic constituents, pectic substance, ash and ash alkalinity, cold and hot water-extractable substances, degree of polymerization and rate of attack by hydrochloric

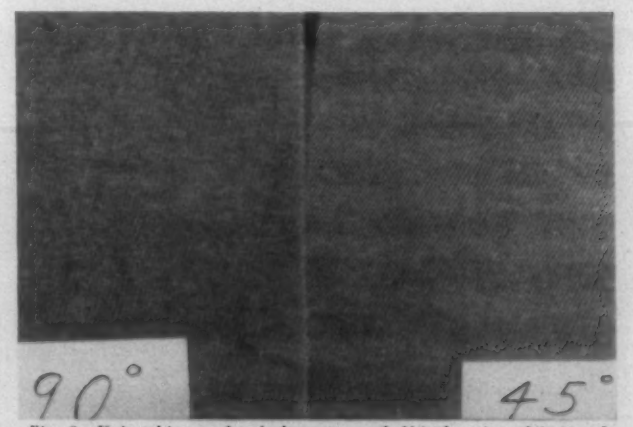


Fig. 2—Knit tubing made of alternate one-half-inch strips of irrigated and rain-grown cotton dyed with Indanthrene Blue BCSN Double Paste. The strips of rain-grown cotton appear darker only when viewed at an angle. This photograph was made with one piece of tubing perpendicular to the camera lens and the other supported at an angle of 45°.

acid and by bleaching agents. These analyses indicated that the cottons were substantially alike.

Although the differences in shade of the two cottons were in many cases quite material, it was found that the amount of dye absorbed by the two under identical conditions was, as determined by spectrophotometric procedure, precisely the same. The observation that no more dyestuff was taken up by one cotton than by the other was further substantiated by a series of exhaust dyeing made with various dyestuffs. Thus, differences in shade had to be attributed to one of two causes, distribution of the dye within the fiber, or reflectance characteristics of the fiber-dye system. Photomicrographs of cross-sections of the dyed fibers showed that the distribution of dye was substantially the same for the two cottons. However, since the apparent differences in depth of shade of the two cottons could be minimized, made to disappear entirely, or even reverse with a change of angle of view or illumination, it was evident that their reflectance characteristics were markedy different. Mercerization, which is known to alter reflectance properties, practically eliminated the shade differences. Optical measurements made on the Hunter-Gardner Goniophotometer provided quantitative confirmation as to the major importance of reflectance characteristics. There is, therefore, strong support for the belief that reflectance from dyed fiber surface is the most important single difference in rain-grown and irrigated cotton, and is chiefly responsible for their apparently different dyeing properties.

It may be concluded that at present the only practical method of eliminating or minimizing dyeing differential between rain-grown and irrigated cottons, aside from careful dye selection, is thorough mecerization of both cottons in yarn or fabric form.

The foregoing paper was delivered in November at Raleigh, N. C., during the first annual alumni conclave of the North Carolina State College School of Textiles.

Stevens Begins Finishing Operations In South

By DAVID CLARK, Editor

THIS editor had the pleasure Dec. 19 of attending the formal opening of the new Plant No. 3 of Delta Finishing Co. at Wallace, S. C., which is about a mile from Cheraw. Delta Finishing, which is a division of J. P. Stevens & Co., Inc., has operated a unit at Attleboro, Mass., since 1945 and another at Philadelphia, Pa., since 1948. Starting up the new plant in South Carolina marks a new era for the Stevens organization; for the first time, fabrics from the firm's 26 Southern mills will be processed on a production rather than a speciality basis in the South.

The new plant is the last—or latest, at least—word in finishing textile goods, and was built at a cost of approximately $4,500,000. J. E. Sirrine Co. of Greenville, S. C., engineered the project, and Daniel Construction Co. of the same city was the contractor. Selection and layout of machinery was carried out by Carl W. Schmidt of Philadelphia, who is Delta's chief engineer and generally regarded as one of the top men in the field of fabric processing. The plant was erected in 238 working days.

In the past it has been the usual practice to erect a building of the approximate size desired, and then arrange necessary machinery in the building. In designing the Delta plant at Wallace the machinery was selected and arranged in the most advantageous manner; then the building was made to conform to the machinery. In order for the roof to cover some of the machinery without having any post where it would impede the movement of goods, some spans have a width of 80 feet.

The one-story main plant is 600 by 180 feet, of steel, concrete and cream brick construction. Almost every prominent builder of dyeing and finishing machinery is represented in the new plant, which will process up to 72-inch-wide cotton, rayon and blended-yarn fabrics. Equipment includes a Butterworth clip tenter, two Morrison Machine pin tenters, a Morrison Sanforizer, 27 Portland Copper and Tank Works dyebecks with three to 20-foot widths and with weekly capacity of 500,000 yards, a six-burner Butterworth singer, a ten-beam Butterworth scouring machine, a

Air view of the new Delta Finishing Co. plant at Wallace, S. C. In the *foreground at right* is the filter plant which provides water for finishing operations; this water is pumped from the Pee Dee River, which is located about a mile west. The steam plant is to the *left* of the main building. The plant proper is 600 feet long and 180 feet deep, containing more than 150,000 square feet of floor space.

Hinnekens boil-off range, a Butterworth mercerizer which operates at 100 yards a minute, a 130-yard-per-minute continuous dye range, two double-strand loop dryers from National Drying Machine Co., and Rodney Hunt Tensitrol washers. Each processing unit is equipped with automatic controls.

Drying, heating and ventilating equipment was installed by Andrews & Goodrich Co., Buensod-Stacey put in the air conditioning system, and the steam plant has Combustion Engineering-Superheater Co. boiler and stoker.

The 12 electric drives installed on ranges and other equipment by General Electric are flexible enough to meet the speed range requirements of a wide variety of cloth types and weights. These drives provide a four-to-one speed range, with the over-all speed easily controlled from one or more central locations convenient to the operators. G. E. motor-generator sets supply adjustable d.c. power to these drive systems. Each generator drives a single range by energizing a common d.c. circuit which supplies armature voltage to all the range motors. Over-all speed control of the range is obtained by rheostat adjustment of generator voltage. Close tension or speed control between units is secured by rheostat control of shunt-field excitation on the individual motors; this is accomplished by the use of a co-ordinated system using compensating gates or by manual rheostats. Two G. E. motor control centers, one for the filter plant and the other for the boiler room, have been installed. All auxiliary electrical equipment was furnished by General Electric, including a.c. motors and controls for fans and blowers and air conditioning pumps. Power distribution and metering is handled by G. E. indoor switchgear.

The manager of the new plant is S. B. (Kit) Carson, who had been general superintendent of finishing at Ware Shoals (S. C.) Mfg. Co. B. M. Keever, who came from the Burlington Mills plant at Dublin, Ga., is superintendent. His assistant, Kelly Traynham, came from Ware Shoals. At present, the mill has more than 150 hourly-paid employees, and plans call for increasing this number. Space for additional equipment is available for future expansion. The Pee Dee River, a mile away, is the water source, and it is stored in a 750,000-gallon tank reservoir near the filter plant.

Gov. Strom Thurmond of South Carolina officially opens the new Delta Finishing plant. With him *(left to right)* are: James Harrell, Stevens vice-president in charge of finishing; B. M. Keever, plant superintendent at Wallace; John P. Stevens, Jr., president of the company; S. B. Carson, plant manager at Wallace; and Robert T. Stevens, chairman of the firm's board.

Facilities of the Seaboard Air Line Railroad, as well as motor freight, will be utilized for receiving and shipping goods.

Attending the open house at Wallace last month was almost like going to a convention of textile manufacturers, because everywhere this writer turned there were groups of prominent textile men. Bob Stevens, Jack Stevens and other New York officials of the Stevens company were present, along with Nick Carter, Harry Carter, Ray Emery, Wilbert Wood and most of the operators of Stevens plants in the South. Gov. and Mrs. Strom Thurmond and other state officials were present to express appreciation for the plant being located in South Carolina.

Piedmont A.A.T.C.C. Unit Lists '51 Slate

The Piedmont Section of the American Association of Textile Chemists & Colorists recently announced that the following dates and places have been reserved for meetings of the unit for the year 1951: Feb. 3, Winter meeting, Greenville, S. C.; April 21, Spring meeting, Raleigh, N. C.; June 29-30, Summer outing, Myrtle Beach, S. C.; Sept. 22, Fall meeting, Charlotte, N. C.

The Feb. 3 meeting, which will be held at the Poinsett Hotel, will get underway at 11 a. m. with a research meeting conducted by Dr. Harley Y. Jennings of Dan River Mills, Inc., which will be followed by an officers' luncheon at 1 p.m. The technical session will be held from 3 to 5 p.m. and will feature two papers: "Polyphosphates in Textile Processing" by Arthur H. Razee, manager of chemical sales and service for Rumford (R. I.) Chemical Works; and "The PPG-IDL Color Eye—the Instrument and Its Use in the Textile Industry" by Dr. George P. Bentley, president of Instrument Development Laboratories, Inc., New York City. The event will be concluded with the annual banquet at 7 p.m.

Present New Fire-Retardant Resin Finish

A new, durable fire-retardant resin finish for fabrics, Pyroset, which retains its flame-repellent properties after 25 or more dry or wet cleanings, has been announced by Richard E. Sumner, manager of the Textile Resin Department of the American Cyanamid Co. The announcement was made at a "Firefighters' Breakfast" held at the Fire Bell Club, headquarters of the Fire Buffs of New York. Samples of untreated and Pyroset-treated fabrics were shown and compared, and demonstrations of Pyroset's effectiveness were given for press representatives and hotel executives.

Pyroset is available in several different formulations to meet specific requirements of various fabrics. In one formulation or another it has been approved by the Underwriters' Laboratories, Inc., the New York City Board of Standards and Appeals, the U. S. Coast Guard and the York Research Laboratories, official laboratory of the Hotel Owners Association. In its approval report the Underwriters' Laboratories, Inc., states, "With Pyroset finish, flameless or smoldering combustion which occurs on ignition does not extend beyond the area affected by surface ignition of the fabric, resulting from the flame exposure."

One unique quality of Pyroset finish is that it has little effect on the hand or feel of a fabric. Consequently, it can be applied successfully to a wide range of fabrics, especially the types used for upholstery and draperies, it is claimed. Application of Pyroset finish results in little or no loss in

tensile strength. Of particular interest to those who have used earlier types of fire-retardant finishes is that Pyroset-treated fabrics are free from any tendency toward browning or discoloration when hung near radiators or heating outlets, and they do not become damp or soggy in wet weather. Dermatologists have found that Pyroset patch tests show no irritation or sensitivity.

Further experiments on Pyroset finish now being conducted at American Cyanamid Co.'s textile resin application laboratories at Bound Brook, N. J., concern its use for children's play clothes, house dresses, sheer curtain dress goods, and all types of pile fabrics.

New Type Blanket For Textile Printing

A new type of blanket for textile printing, which eliminates the need for the conventional back gray, was announced recently by Dewey & Almy Chemical Co. following completion of a full scale test under actual plant conditions in which, since the first of the year, two million yards of print cloth were produced in a variety of constructions and patterns in both cotton and rayon.

The new product successfully welds natural and synthetic fibers with synthetic rubber into an endless blanket with a washable, absorptive and extremely durable print surface, the company statement said, adding that such a combination has been sought for 100 years by the textile printing industry. It was pointed out that the new blanket combines the best features of nylon back gray and the company's Darex embossed wash blanket. The company is now tooling up for volume production under patents issued and pending.

Du Pont Announces New Textile Finish

A textile finish that will impart durable wrinkle resistance and shrink resistance to cotton and viscose rayon fabrics has just been developed and placed on the market by the Du Pont Co. The material has been trade-marked Zeset. For the American housewife, a principal consequence of its development is the fact that:

Spun viscose rayon fabrics, many of which are not now washable, can, when treated with Zeset durable wrinkle resistant finish, be laundered and bleached under the usual home conditions without the serious loss of strength and discoloration frequently encountered in the case of home-bleached fabrics. Zeset not only makes cotton and viscose rayon resistant to wrinkling and shrinking, the Du Pont Co. claims, but it gives both categories of fabrics a soft, wool-like finish rather than the harsh, boardy effect produced by certain of the earlier wrinkle and shrink resistant finishes. Zeset imparts a degree of shrink resistance to viscose rayon that it is not possible to attain without finishes of this type, and its development is expected to enlarge the wash goods field for manufacturers of spun rayon fabrics.

An outstanding characteristic, from the standpoint of the textile processor, is the ease with which it may be applied and the fact that its use eliminates many of the problems formerly associated with the application of crease-resisting and stabilizing materials. Zeset durable wrinkle resistant can be applied by any mill possessing efficient padding, drying, heat treating, and washing equipment used in applying thermosetting resins. It is diluted by simply mixing with water. Unlike earlier finishes in its field which tended to "set up" during application, Zeset is stable during storage and the treating baths are stable for days at room temperature.

Zeset may be used with Zelan durable water repellent, and a combination of these two finishes on viscose rayon imparts to that fiber water repellency, and the wrinkle resistance associated with wool. The new finish also may be used with softening or stiffening agents to modify the hand and feel of fabrics. To date it has been applied primarily to viscose rayon and cotton fabrics, but applications for it are indicated in the treatment of linen and pile fabrics such as transparent velvets.

While most spun viscose rayon fabrics lend themselves admirably to treatment with Zeset, cotton fabrics must be properly selected for application of the finish. In general, cotton fabrics made of combed yarns and mercerized are better suited for processing with Zeset. A booklet describing the chemical and physical properties of Zeset, and method of applying this new finish, has been prepared by the Fine Chemicals Division of the Du Pont Co.

Cultivation Chemicals Non-Effective In Dyeing

Recent tests indicate that chemicals used to defoliate cotton and those applied as herbicides to control weeds and grass in cotton have no detrimental effect on the dyeing qualities of cotton fibers. In the experiments samples of cotton were obtained from plots where 12 different defoliation methods had been followed and from one check plot which was not defoliated. Normal procedures were carried out in growing and defoliating the cotton, all of which was machine picked.

After the cotton was harvested and ginned it was classed to obtain grade and staple. To determine the effect on the color of the fibers the samples were tested in the new automatic cotton colorimeter. To further study the effect of the various defoliants on the end-use properties of the fiber, samples were subjected to certain dyeing and bleaching tests at Avondale Mills in Alabama. Similar procedures were followed with samples from plots where different herbicides were applied to control weeds and grass.

Co-operating in the experiments were the Division of Cotton and Other Fiber Crops and Diseases, U.S.D.A.; the Arkansas Agricultural Experiment Station; the Cotton Branch, Production and Marketing Administration; Avondale Mills; and the National Cotton Council.

New Book Covers Colloidal Dispersions

John Wiley & Sons announces the publication of a new book, *Colloidal Dispersions,* written by Earl K. Fischer. A study of the dispersion of finely divided solids in liquid media, this book covers the theory and practice of this chemical process, essential in the manufacture of textiles and many other industrial products. The book provides a detailed account of the practical uses of wetting agents, the operation of mixing equipment and dispersion machinery in mills, and a complete, critical discussion on particle size. The author also discusses several topics previously neglected in colloidal literature, including dispersion by non-aqueous liquids and dispersion by phase transfer (the "flushing process"). A leading research worker in the field of surface and colloid chemistry, Dr. Fischer was formerly head of the physical chemistry division of the Institute of Textile Technology. He is currently chief of the Organic Coatings Section of the National Bureau of Standards.

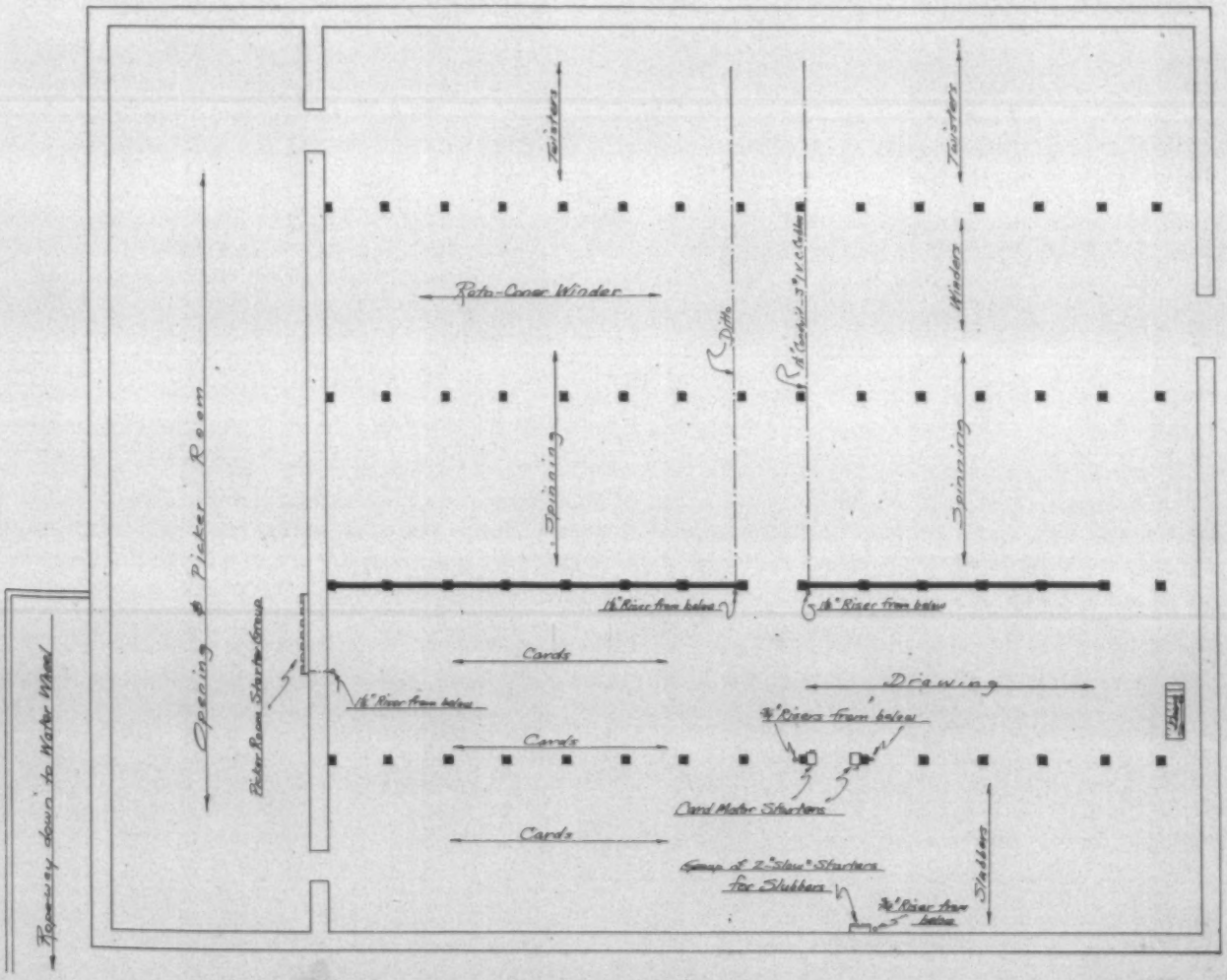
A Textile Plant Turns From Water Power To Electricity

By JAMES T. MEADOR

THIS is the story of the conversion to electric power of one of the last mechanically-driven, water power textile mills in the South, that is, driven directly from the take-off shaft of the water wheel rig by means of a multiple-strand rope drive. The other remaining textile mill with this type of drive will be discussed in a later issue of TEXTILE BULLETIN.

The plant in this case is the Currie Mill, Inc., listed in *Clark's Directory of Southern Textile Mills*, as having 2,400 spindles on 5s to 12s cotton yarns, two to six-ply, weaving and soft twist. The original building, 50 feet by 152 feet, with partial basement, was built in 1896 on the Deep River, in Moore County (approximately 12 miles from Carthage, N. C., and six miles east of Robbins, N. C., and about five miles from the Norfolk and Southern Railway) by Newton Woody and his two sons, T. N. and W. E., who came down from Greensboro in a big covered wagon.

For machinery, they bought a small mill in Cedartown, Ga., had it dismantled, and shipped to this location, with the former superintendent, a Mr. Thompson, coming along to set the machinery up and operate the mill in its new location. W. W. Hussey, the present superintendent, started



Sketch of main floor.

out with the mill under the guidance of Mr. Thompson, bringing his total period of service to a present total of 54 years.

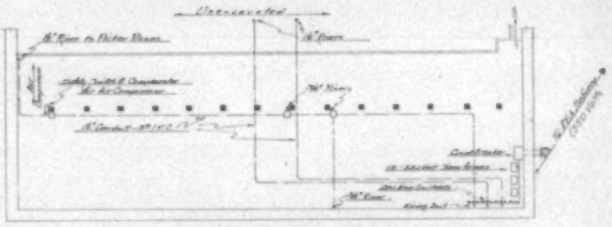
To operate this original mill, there was built across the Deep River a wooden dam with a flume approximately 500 feet in length leading to a small water wheel in a building which was about 20 feet lower in elevation and about 40 feet away from the mill building, which called for a multiple-strand rope drive from the wheel shaft to the main lineshaft, a center distance of about 65 feet. This power rig was not only used for driving the mill, but also for operating a flour and grist mill, saw mill and cotton gin.

An interesting sidelight in this connection is the fact that herewith is presented a vividly contrasting picture that serves to emphasize how much the textile industry has progressed in the South since its beginning during the bitter and heart-breaking period of Reconstruction. These associated plants, the flour and grist mill, the saw mill and cotton gin, were necessary for any self-supporting community in the South in those days, particularly in this community, inasmuch as there was no money for wages except in rare cases, the compensation to the hands being in the form of credit at the company store, which carried everything required for living in those days. Today, under the present mill management, the community is prosperous, with the operatives being home owners, with cars and the other comforts of life on a par with any other locality.

But, to continue with the story of this mill, an addition, 75 feet by 152 feet, was built beside and on the uphill side of the original building in 1910, and still the original water power rig was continued in use until 1920, at which time the present concrete dam was built providing a hydraulic head of 19 feet at the water wheel, which has a rating of 250 horsepower. The present power capicity of the water power arrangement, based on the flow of water, on an average, is 1,500 h.p. for six months of the year, 900 h.p. for three months, and 400 h.p. for three months, which John M. Currie, general manager, says they plan to develop and utilize to the fullest extent, by means of a hydro-electric generating station and transmission system to deliver the electric power to the point of distribution in the mill.

In 1940 the mill was bought by the Currie brothers of Carthage, N. C. W. H. Currie became president and John Currie became vice-president and general manager. Heretofore, the mill had only a few lights of the incandescent type, supplied by a small direct-current generator which was driven from the water-wheel take-off shaft by a single strand belt drive. With the change in ownership, John Currie installed fluorescent lighting throughout the plant and started the third shift for the first time. It is notable here in view of the fact that it has operated and produced with ease and with a very high rate of efficiency, as contrasted with the general run of textile mills where this is quite a sore spot. At the time of this change, the local R.E.A. organization, the Moore County Electrical Membership Corp., made a power service entrance of sufficient capacity to operate the fluorescent lighting on 110 volts as well as a few small three-phase, 220-volt motors, on winders, lap machines, warpers, etc., but, not enough to relieve the load on the water-wheel during dry seasons. To relieve this situation, two Diesel engines were installed, each of 175 h.p. rating, and connected by means of multiple V-belt drives to the main water-wheel drive shaft in such a way that either one could be used, with the other as a stand-by unit, to assist the water-wheel in driving the main mill lineshaft through the rope drive.

Gradually the increasing loading of the machinery has made necessary the complete conversion to electric power, which will make way for the prospect of their own generation of electricity by a modern hydro-electric power plant at a later date. Meanwhile, the local R.E.A. corporation will serve them with electric power at 550 volts potential, with a capacity of approximately 450 h.p., which will be constantly available throughout the year, and not dependent upon variable water power conditions, such as are in effect at the present time with the limited pondage or storage capacity in the reservoir above the dam.



Sketch of basement.

Now, with the beginning of full electric power operation at 550 volts service, there is being installed an air-break circuit breaker of the individually enclosed type, 600 amperes continuous rating, with 25,000 amperes short circuit interrupting capacity, at the service entrance to the mill, with a switchboard for branch circuit distribution throughout the mill. This switchboard consisted of horizontal two by eight-inch timbers heavily nailed to vertical two by eight-inch timbers fastened to the wall by means of half-inch through bolts. The wall, besides being 17 inches through (or thick), was very rotten or soft and the surface very irregular. Before the switches were mounted on this back board, the whole area of the wooden surface was covered with No. 22 gauge sheet metal, in an effort to make the whole thing thoroughout fireproof.

There was installed a wiring duct at the top of this board, into which there were mounted one 100-ampere, 600-volt switch for the transformers, and three 200-ampere, 600-volt switches for the three 1½-inch branch circuits which divided the total mill load (550-volt load, that is) into three nearly equal parts. The transformers were of 110 220-volt secondary rating so as to produce current for lighting and the small 220-volt power that was already in use in the mill.

The real problem about how to run the branch feeder circuits came in the room with the spinning frames, winders and twisters. Here, the roof was rather irregular and very high, which made dropping from the ceiling to the individual motor starters on the frame quite a flimsy sort of job, especially in view of the fact that all spinning and twisting frames carried traveling cleaners, with the rails mounted on top of the creels. Also, we were unable to go under the floor and rise up to these individual starters. So, the solution of the problem was to run the 1½-inch conduit lines across the room at a height of seven feet above the floor, enough to be clear beneath the traveling cleaner, and also to give sufficient head room for ordinary purposes. This is working out to be a rigid, neat sort of a job. The balance of the circuits are more or less typical of the accepted standard type of approved mill wiring.

Promotions, Resignations, Honors, Transfers, Appointments, Elections, Civic and Associational Activities

PERSONAL NEWS

Willie T. Thurman, overseer of the cord weaving and twisting departments at the Anderson Plant of Bibb Mfg. Co., Columbus, Ga., has completed 25 years of continuous service with the company.

Vance Z. Wilson, formerly with Royal Cotton Mills at Wake Forest, N. C., is now card room foreman at the Woodlawn Plant of American Yarn & Processing Co. at Mt. Holly, N. C. . . . John Snoddy has been transferred from the methods and standards department to the Spun Fibers, Inc., plant at Whitnel, N. C., as overseer for the third shift. . . . William B. Bonner is the new assistant industrial engineer in the methods and standards department. A native of Alabama, Mr. Bonner is a 1947 graduate of Georgia Tech with a B.S. in textiles.

Marine Lieut. Herbert B. Turner, superintendent of N & W Industries, Inc., cotton textile plant at Magnolia, Ark., was captured Nov. 29 by the Chinese Communists in Korea. Another Marine, released by the Reds because of his wounds, said Lieutenant Turner still was in Communist hands on Dec. 2. Lieutenant Turner is the son of Lawson W. Turner of Lynchburg, Va., board chairman of N & W.

Carl C. Mattmann has resigned from his post with Stonecutter Mills Corp., Rutherfordton, N. C., to enter business for himself as a consultant on fabrics, styling and promotion. For the past year and a half he has been in charge of the fabric development department at Stonecutter and assistant on technical matters to the vice-president in charge of sales. Prior to joining Stonecutter he was associated with Textron, Inc., and Tennessee Eastman Corp.

Wyllys H. Taylor, former president of Newnan (Ga.) Cotton Mills, has been appointed chief of the cotton branch of the textile division of the National Production Authority, Washington, D. C. His friends will be glad to learn that the N.P.A. has secured the services of a person so well qualified to handle textile war procurement matters.

C. Fred Butterworth and Harry A. Billings, who are retiring soon as directors and vice-presidents of Draper Corp., Hopedale, Mass., were honored recently at a dinner party given by directors of the organization. Mr. Butterworth for many years was head of the company's main office and Mr. Billings is a former general manager of the firm.

Edward F. Haney, formerly with Gastonia (N. C.) Combed Yarn Corp., is now overseer of carding and spinning at the Ella Division of Consolidated Textile Co., Inc., at Shelby, N. C.

Russ Murphy, who resigned recently from the football coaching staff at the University of North Carolina, has been named personnel director for Carolina Mills, Inc., Maiden, N. C.

William J. Patterson, Jr., of Greenville, S. C. has been appointed field technical representative for Synthron, Inc., chemical firm of Ashton, R. I., and will represent the company in North and South Carolina. For the past nine years Mr. Patterson was with Westboyd Chemical Co. in the same territory and previous to that was for nine years in textile finishing work with North Carolina Finishing Co., Ware Shoals Bleachery and the Graniteville Co.

Robert H. Baker, superintendent of dyeing, bleaching and finishing at Mooresville (N. C.) Mills, last month began his tenure of office as chairman of the Piedmont Section of the American Chemistry Society.

John G. Bucuss, general manager of the strapping division of Acme Steel Co. was elected president of the Materials Handling Institute for 1951 at the group's annual meeting in New York City. A member of the institute since 1946, Mr. Bucuss served successive terms as director, second vice-president and first vice-president the last three years. He has been associated with Acme Steel Co. for 32 years.

Donald D. Pascal has been named vice-president in charge of sales of National Starch Products, Inc. Mr. Pascal has been vice-president of the company in charge of Eastern and Pacific Coast sales divisions. His headquarters will be in New York City. . . . S. F. Thune, sales manager of the Mid-Western division, will become general manager of that division. He has been associated with the company since 1943, in various capacities. . . . Lester Klempner, at present sales manager of the New York division, will also become sales manager of the Eastern division, which extends from Maine to Florida.

Paul B. Halstead will join the Cone Export & Commission Co. on April 1 as head of its newly created statistical department. As noted, Mr. Halstead will retire as head of the statistical division of the American Cotton Manufacturers Institute upon reaching the retirement age in March. During the two decades he was an officer of the institute Mr. Halstead served the industry in many posts. He was secretary of the N.R.A. Cotton Textile Code Authority, secretary-treasurer of the Associated Denim Producers, and was treasurer of the Industrywide Committee on Public Relations. During the war years he was secretary-treasurer of the Cotton Weavers' Industry O.P.A. Committee, advisor to the textile section of the Army-Navy Munitions Board, and consultant to the Quartermaster Department.

Dwight C. Waynick, a 1945 graduate of the North Carolina State College School of Textiles, has joined Borne Scrymser Co., manufacturer and distributor of fiber conditioning agents, as sales and service representative in northern North Carolina and Virginia. Previously associated with Dan River Mills, Inc., Danville, Va., Mr. Waynick will make his headquarters at Greensboro, N. C. W. E. Smith of Charlotte, N. C., is Borne Scrymser's Southern sales manager.

Charles P. Yates, personnel manager of William Iselin & Co., has been promoted to assistant treasurer. Mr. Yates has been with Iselin since 1933, except for an interim period of three years during World War II, in which he served as a lieutenant, United States Army. Mr. Yates will be transferred to the Grand Rapids office of the company to head up the financial department of that office, as well as to take over general administrative duties.

Roy C. Baker, formerly of Clearwater, S. C., is now superintendent of plant maintenance at the Hanes, N. C., yarn mill of P. H. Hanes Knitting Co.

Adrien S. Price has been appointed advertising and public relations director of Dexter Chemical Corp., New York City.

Fred McCarthy, for the past seven years trade sales manager for National Lead Co., has joined U. S. Gutta Percha Paint Co., Providence, R. I., as general sales manager. . . . Howard B. Eastman, formerly of the sales staff, has been promoted to vice-president and secretary of the firm and Everett

B. Nelson, formerly advertising manager, has been named advertising and sales promotion manager.

W. D. Hurst has been promoted from superintendent of the American Thread Co. plant at Dalton, Ga., to become general superintendent of the firm's Georgia Mills. . . . J. D. King, formerly assistant superintendent, has been named superintendent at Dalton to succeed Mr. Hurst.

James H. Higginbotham and James F. Mitchell recently completed 25 years of continuous service at the Hillside Plant of Callaway Mills Co. at LaGrange, Ga. Mr. Higginbotham, 81, is employed in the warehouse and yards at Hillside while Mr. Mitchell, 42, is assistant overseer of the Hillside card room.

Raymond C. Gaugler has been elected president of American Cyanamid Co. succeeding the late William B. Bell, who died Dec. 20. Mr. Gaugler has been associated with American Cyanamid Co. since 1917, has been a director of the firm since 1929, and has served as executive vice-president since October, 1947.

G. T. Gardner has assumed his duties as manager of the Cramerton (N. C.) Division of Burlington Mills Corp. succeeding C. C. Dawson, retired. Mr. Dawson, however, continues his affiliation with the division in an advisory capacity. . . . J. C. Barbee has been named assistant manager of the Cramerton Division and General Superintendent J. N. Summerell now has over-all supervision of the spinning operation along with personnel, supply, the village and shops.

Robert E. Stevenson, formerly with the technical service department of the National Cotton Council of America, has been appointed textile technologist in the Washington, D. C., office of the U. S. Department of Agriculture's Bureau of Agricultural and Industrial Chemistry. Mr. Stevenson will work under the direction of Dr. Walter M. Scott, assistant chief of the bureau, in planning and co-ordinating investigations at the four Regional Research Laboratories on new and wider uses for cotton and other fiber crops, developement of synthetic fibers from agricultural materials, and utilization of straw and other agricultural residues.

SOUTHERN STATES EQUIPMENT CORP. OFFICIALS CELEBRATING ANNIVERSARIES last month are *(left to right)*: Olan Richardson, president; Arthur Henderson, founder of the subsidiary Henderson Foundry and Machine Co.; C. W. Walter, sales manager of the S.S.E.C. mechanical division; and Robert D. Carmichael, assistant chief engineer of the mechanical division. The firm was organized in 1916 in Alabama as a producer of high-voltage electrical utilities equipment, was enlarged in 1940 with acquisition of the present main plant at Hampton, Ga., where war production earned an Army-Navy "E" Award. After World War II all operations were concentrated at Hampton. The company entered the textile machinery field in 1940 when Henderson Foundry and Machine was purchased. Development of its well-known ball-bearing comb box has been a principal Henderson activity.

Henry Pope, cotton buyer for Jefferson (Ga.) Mills, is recuperating at General Hospital in Athens, Ga., from injuries received in an automobile accident a few days before Christmas. He suffered compound fractures of both legs in the accident.

Col. Elliott White Springs, president of Springs Cotton Mills, Lancaster, S. C., recently was named commander of the South Carolina Wing of the Civil Air Patrol.

H. W. Buchanan has been appointed superintendent of Erlanger Mills at Lexington, N. C. Mr. Buchanan has been connected with Erlanger for nine years and has been acting superintendent since the departure some months ago of J. B. Powell, who is now with Monarch Mills at Lockhart, S. C. Prior to joining Erlanger Mills, Mr. Buchanan was associated with Drayton Mills at Spartanburg, S. C.

R. D. Sanders, who has been treasurer of Morgan Cotton Mills, Inc., Laurel Hill, N. C., has been elected vice-president and treasurer of the firm. . . . Julian Butler, who has been general manager, has been elected vice-president in charge of manufacturing.

James B. Lowery has been appointed superintendent of the Towel Plant of Fieldcrest Mills at Spray, N. C. A native of New Bern, N. C., and a graduate of North Carolina State College, Mr. Lowery has been connected with Fieldcrest since September, 1947. . . . In other organization changes at Fieldcrest, Arthur G. Lewis was appointed assistant head designer at the Karastan Plant in Leakesville, N. C.; Cecil J. Squires, formerly of the engineering department, was named foreman of the weaving department at the Bedspread Plant in Draper, N. C., and F. W. Younts, formerly foreman on the first shift at the Bedspred Plant, was transferred to the second shift; Jack R. Baker was appointed general foreman of the napping department at the Finishing Plant in Spray and Walter G. Atkinson, foreman of the napping department since May, 1944, was appointed assistant foreman on the first shift to enable him to devote his full time to the technical aspects of blanket finishing.

William G. Polley, sales engineer for Acme Steel Co., has been assigned to the staff of Southern division sales manager W. S. Huss. Mr. Polley will continue to make his headquarters in Atlanta, Ga. . . . Creation of a new Atlanta sales district covering Florida, Georgia, Alabama and Tennessee has been followed by the appointment of Clarence A. Carrell as district manager. Mr. Carrell, who joined Acme Steel 30 years ago, has served as acting manager of the Southern Division. . . . G. R. Easley has been appointed district manager of a new sales territory consisting of Virginia, North Carolina and South Carolina. Mr. Easley, a specialist in the problems of the textile industry, has been with Acme Steel for 16 years. District headquarters will be located at Greenville, S. C. . . . Judd B. Farr has been assigned to the South Carolina territory previously handled by Mr. Easley. John J. Jorgensen, has been transferred from area headquarters to the Chattanooga, Tenn., sales territory. Both men are 1950 graduates of Acme Steel's sales training program.

Warren A. Beh has been appointed general manager of the Industrial Fabrics Division of Textron, Inc. Mr. Beh resigned recently as director of sales of the Nylon Division of E. I. du Pont de Nemours & Co., having been with Du Pont for 20 years. The Industrial Fabrics Division of Textron is a newly-formed unit of the company which will be concerned with the development of new synthetic fabrics for sale to industrial users and for military uses in the defense program. Mr. Beh's appointment is to be effective Feb. 1, 1951. His headquarters will be in the New York office of Textron at 1407 Broadway.

Dr. Ernest B. Benger, one of the country's foremost scientists, was honored Dec. 13 at Waynesboro, Va., when the Du Pont Co. formally dedicated its new Acetate Research Laboratory in the name of Dr. Benger, former manager of the company's rayon technical division. Dr. Benger, who retired in 1947 on the 30th anniversary of his employment with the company as a research chemist, was the guest of honor at the brief noon-day ceremony. He was accompanied by Mrs. Benger and his son, Ernest S. Benger. Leading officials of Waynesboro and more than 30 executives of the Du Pont Co. who came from Wilmington, Del., Richmond, Va., and New York City, were among the guests. . . . The appointment of two new assistant directors of research was announced Dec. 11 by the Du Pont Co.'s rayon technical division. Dr. Chiles E. Sparks, an assistant manager of the development section, becomes assistant director of nylon research, and Dr. L. Frank Salisbury, present assistant director of nylon research, becomes assistant director of acetate research.

Alan A. Clow and Archer E. D. Booker, sales representatives of A. M. Tenney Associates, Inc., have been transferred to the new office of the firm in the Woodside Building at Greenville, S. C. Mr. Clow formerly was located at Atlanta, Ga., and Mr. Booker at Greensboro, N. C. Leslie L. Cobb and Vernon Kirkman will continue to service Eastman fibers in the Greenville and Georgia territories and also will make their headquarters in the new office.

John C. McGunnigal has been appointed sales manager of the steel strapping division of The Stanley Works, New Britain, Conn. Mr. McGunnigal formerly was general sales manager of Brainard Steel Co.

Frederick J. Hunter observed his 50th anniversary with James Talcott, Inc., Dec. 15 and was honored at the company's annual Christmas dinner-dance held this year at

the Essex House, New York City. Mr. Hunter, who is purchasing agent and assistant secretary of the corporation, is the firm's oldest employee in length of service.

William S. Coulter, who has been associated with Burlington Mills Corp. since the concern was founded in 1923, retired Jan. 1 as vice-president and as a member of the executive committee of the board of directors. Mr. Coulter will continue, however, as general counsel, a director and as a member of the finance committee.

James Oates, Sr., is now superintendent of the West Point, Miss., plant of Aponaug Mfg. Co. Mr. Oates previously was associated with Dan River Mills, Danville, Va., and with a textile plant at Cornelius, N. C.

Walter M. Williams, executive vice-president and manager of Virginia Mills, Inc., Swepsonville, N. C., was honored recently by being named "1950 Citizen of the Year" for Burlington and Alamance counties. He received a cup upon his selection in a Kiwanis-sponsored event.

C. David Reich has joined the synthetic fabrics department of Reeves Bros, Inc., as assistant to Thomas W. Oliver, Jr. Mr. Reich will be in charge of the development and promotion of new fibers and fabrics for the synthetic fabrics department with particular emphasis on industrial and automotive end uses. Prior to joining Reeves he was associated with Burlington Mills Corp.

E. C. Cross of Borden Mills, Inc., Kingsport, Tenn., recently was elected treasurer of the Kingsport Community Chest.

OBITUARIES

Robert J. Bartholomew, 78, chairman of the board of Fletcher Works, Inc., Philadelphia, Pa., and a noted engineer and authority on textile machinery, died Dec. 27. Mr. Bartholomew had been with the company for 52 years. He became president in 1940 and was elected chairman in 1950.

William Brown Bell, 71, president of American Cyanamid Co., died of a heart attack Dec. 20 at Marrakeech, French Morocco. He was on a business trip surveying the company's interests abroad at the time of his death. Mr. Bell became president of American Cyanamid Co. in 1922 and his integration of the numerous companies merged to form the present company was considered a major achievement in industrial management. Mr. Bell's business connections were numerous, but he devoted much time to fields other than business and industry. He took an active interest in the field of education and was closely associated with Duke University, Durham, N. C., and Haverford (Pa.) College. His second wife and a daughter survive.

Howard S. Borden, 74, for a number of years head of Borden Mills, Inc., Kingsport, Tenn., died Dec. 9 at his home in Rumson, N. J. Mr. Borden and his only brother, B. H. Borden, assumed management of Borden Mills in 1912 when their father, M. C. D. Borden, died. It was the vision of these two men that launched the construction and putting into production of the mills at Kingsport in 1924. In 1935 Mr. Borden's two sons, John C. and Arthur B., assumed active management of the business. Arthur B. Borden is now treasurer and vice-president. In addition to those named above, Mr. Borden is survived by his second wife, another son, a daughter and a brother.

Harry Welborne Callaway, 66, a director of Callaway Mills Co., LaGrange, Ga., died Dec. 30 after an extended illness. He was the brother of Fuller E. Callaway, founder of Callaway Mills. Mr. Callaway joined the concern in 1924 as Southern sales manager and ill health forced his retirement a number of years ago. Surviving are his wife, a daughter, a brother and a sister.

Robert L. Crook of Chester, S. C., who retired recently after 35 years as a cotton buyer with J. P. Stevens & Co., Inc., died Dec. 22 at a hospital in Chester. Surviving are his wife, a sister and four brothers.

Eugene S. Graves, 74, who was president of Franklin Process Co., Providence, R. I., for 23 years until his retirement in 1948, died Jan. 4 at his home in Providence. Mr. Graves joined Franklin Process Co. in 1911 and prior to that was associated with New Bedford (Mass.) & Agawam Bleachery. He began his professional career as professor of chemistry at the New Bedford Textile School. His wife and six children survive.

G. E. Huggins of Montclair, N. J., president of Martel Mills Corp., which operates large plants in the Carolinas, died suddenly Jan. 6. Mr. Huggins during a number of years was chairman of the textile industry committee on public relations with offices in New York City.

MacMillan King, at one time manager of the old Pelham Mills near Batesville, S. C., died Jan. 2 at his home in Flat Rock, N. C. A daughter and two brothers survive.

Burton F. Mitchell, 52, retired textile executive of Mount Holly, N. C., died Jan. 2 at the home of his mother in Shelby, N. C. A graduate of North Carolina State College School of Textiles, Mr. Mitchell worked for a while with the Armstrong group of mills in Gaston County, N. C., and then for 29 years as an executive of American Yarn & Processing Co. at Mount Holly. Surviving are his mother, his wife, a daughter and a brother.

Harold P. Reno, 68, at one time vice-president and general manager of Sayles Finishing Co., Saylesville, R. I., died Jan. 6 at his home in Norwichtown, Conn. Surviving are his wife, three daughters and two sisters.

Amory Warren Way, 81, retired chief master mechanic of the Edna Plant of Cone Mills Corp. at Reidsville, N. C., died Dec. 25. Mr. Way joined Edna Cotton Mills in 1898 and was retired last April 1. Surviving are his wife, two sons, two daughters and a brother.

MILL NEWS

CONSTRUCTION, NEW EQUIPMENT, FINANCIAL REPORTS, CHARTERS, AWARDS, VILLAGE ACTIVITY, SALES AND PURCHASES

GREENVILLE, S. C.—Two large tracts of land near Cedar Mountain, N. C., have been given to educational and charitable organizations by J. P. Stevens & Co., Inc. Camp Piedmont, a 247-acre site and several buildings, has been donated to Greenville Lodge 858 of the Elks, which will develop the property as a Summer camp for deserving children of Greenville County. A 183-acre tract and about 20 buildings, known as Camp Reasonover, has been donated to the Parker School District for use as an extensive recreational and educational center for children and adults.

GAINESVILLE, GA. — An expansion program currently under way at the Gainesville and New Holland, Ga., plants of Pacolet Mfg. Co. will add more than 80,000 square feet of floor space to manufacturing facilities. A three-story extension to the New Holland plant will contain 40,000 square feet of floor space. A one-story addition at Gainesville, which will house looms, will provide 41,000 square feet of space. The structures are expected to be completed early in March.

FRANKLINTON, N. C.—Heenan Holt of Graham, N. C., has been awarded the contract at $120,990 for additions and alterations to the Vamoco Plant of Burlington Mills Corp. Architect for the project is Biberstein & Bowles, Inc., of Charlotte, N. C. Vamoco is a unit of the Bur-Mil spun weaving division.

LANCASTER, S. C.—The first delivery of 500 of the 14,000 looms ordered from Draper Corp. early in 1949 by Springs Cotton Mills has been made. They are now being delivered at the rate of 200 per month and the first thousand will be installed in the Lancaster Plant. A 101 by 269 foot addition to be constructed at the Fort Mill, S. C., plant will house about 400 looms. This addition, which will be air conditioned, will probably be completed by early Fall.

GREENSBORO, N. C.—Officials of Cone Mills Corp. and Dwight Mfg. Co. of Alabama City, Ala., Dec. 26 jointly announced plans for merging Dwight into the Cone chain. The proposal has been tentatively approved by directors of the two companies and will be submitted to stockholders of

MILL NEWS

each for a final vote at special sessions to be held soon. Dwight utilizes about 85,992 spindles and 2,268 looms in the production of sheetings, drills, twills, sateens and osnaburgs.

BURLINGTON, N. C. — Unless war restrictions force a change in plans, Frank Ix & Sons of New York about March 1 will begin construction of a $1,000,000 rayon weaving plant on a 13-acre tract of land about two miles from Burlington. The plant would employ about 300 in initial operations, with plans calling for doubling the employment at a later date.

SHELBY, N. C.—Double Shoals Mill of Shelby, Inc., has been chartered to deal in textile products. Authorized capital stock is $400,000; subscribed stock $300 by F. A. McCleneghan, F. T. Miller, Jr., and B. W. Widener, all of Charlotte, N. C.

GREER, S. C.—Transfer of 403 company-owned homes to employees of J. P. Stevens & Co., Inc., at a total cost of $1,218,175, was completed recently. The Stevens firm operates the Greer and Victor Plants here of Victor-Monaghan Co., utilizing 90,800 spindles and 1,814 looms in the production of fancies, rayon and cotton goods.

CONCORD, N. C.—Production at the former White-Parks Mills Co., purchased last August by Linn Mills, was to be resumed "around the first of the year." L. F. Lipe, president of Linn Mills, announced that about 100 persons will be employed in the manufacture of cotton yarn. White-Parks was organized March 4, 1918, and was operated jointly with Brown Mfg. Co. and Roberta Mfg. Co. for many years before being closed.

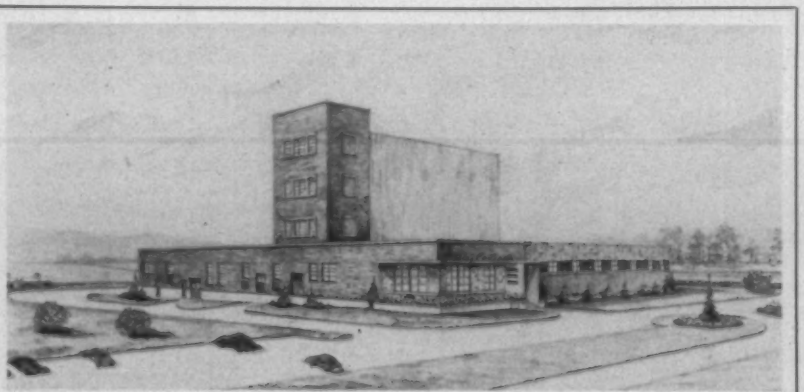
LAGRANGE, GA. — The No. 2 spinning room at Dixie Mills, Inc., has been converted to rayon production. Spinning frames have been installed where twisters formerly were located. The twisters have been taken out. All spinning is on reverse and double roving.

LOS ANGELES, CAL. — Burlington Mills announces the establishment here of a piece goods and hosiery dyeing and finishing operation especially designed to service the needs of the expanding west coast textile apparel and retail markets. The firm has just completed the purchase of the plant and facilities of Arthur Bone, Inc., rayon piece goods dyeing and finishing firm located on Worth Street. The Bone firm has been in operation for the past 30 years. The purchase of the plant marks the first manufacturing facilities to be established by Burlington in this area. The piece goods dyeing and finishing production facilities of the Bone plant will be modernized with the newest equipment, doubled in capacity, and hosiery dyeing and finishing operations will be added as quickly as possible. Stewart Bone, vice-president and general manager of the firm, will continue with the Burlington organization and will be in charge of the expanded manufacturing operation.

WINSTON-SALEM, N. C. — The Duplan Corp. Dec. 22 announced plans for expanding production facilities at its Forsyth Division plant on Walker Road here. Details of the expansion program have not been revealed, but it is believed that the plan will call for installation of additional machinery only and will not involve any building addition to the Forsyth Division.

ATLANTA, GA.—Fairforest Co. of Spartanburg, S. C., a subsidiary of Reeves Bros., Inc., Dec. 22 filed suit in Fulton Superior Court here for $804,973 against Cluett-Peabody & Co. charging that amount was overpaid in the form of royalties for use of the Sanforizing process of Cluett-Peabody. Fairforest charged that its agreement with Cluett-Peabody for the use of the patented process of shrinking cloth contained a clause resulting in the overpayment of royalties. The clause in the contract for royalties, agreed to in 1933, set forth that should Cluett-Peabody make an agreement later with another firm at a lower rate, Fairforest would be entitled to use the lower rate. Fairforest charged that Cluett-Peabody offered another textile firm a lower royalty rate in 1936 and in 1939 again offered still another firm more favorable terms for use of the Sanforizing process. In both instances, Fairforest said, it had no knowledge of the terms granted the other firms.

CHARLESTON, S. C.—Initial work was started last month on the first unit of a



BELDING HEMINWAY CO., INC., will utilize this $2,000,000 plant at Hendersonville, N. C., for production of coated, untwisted nylon and Orlon threads. Building has already been started by Daniel Construction Co., the contractor. Plans are drawn to allow for doubling the plant's size if future trade conditions justify it. The firm already operates mills at Morristown, Tenn., and Bedford, Va.

large plant near here for United Piece Dye Works of Lodi, N. J. C. M. Guest & Sons of Anderson, S. C., was awarded the contract for construction of the plant and the first unit will cost in excess of $1,000,000, it is reported. There is ample room for expansion on the 44-acre site west of the city waterworks at Hanahan Station between U. S. Highway 52 and the Atlantic Coast Line railroad tracks. The site is about 13 miles north of Charleston. No announcement has been made as to the eventual size of the plant or its cost. It will be utilized for the finishing, dyeing and printing of textile fabrics.

CLARKESVILLE, GA.—A. K. Adams Co., Inc., of Atlanta has been awarded the contract for construction of a $1,500,000 rayon weaving plant here for United Merchants & Manufacturers, Inc. Construction of the plant, which will contain about 153,000 square feet of floor space, is expected to begin soon. Architect-engineer for the project is Robert & Co. Associates of Atlanta.

MACON, GA.—A new group insurance program, offering enlarged policy benefits to employees, went into effect Jan. 1 at Bibb Mfg. Co.

KINGSPORT, TENN.—Tennessee Eastman Corp., a wholly-owned subsidiary of Eastman Kodak Co., was dissolved effective Jan. 1 and its business in Tennessee and Texas is now conducted as divisions of the parent company. The Tennessee division is known as Tennessee Eastman Co., Division of Eastman Kodak Co., and the Texas division is known as Texas Eastman Co., Division of Eastman Kodak Co. These divisions continue the same activities at Kingsport, Tenn., and Longview, Tex. A. M. Tenney Associates, Inc., continues as sales representative for Eastman fibers. Tennessee Eastman was organized in 1920 to make methanol, an ingredient of photographic film base. It began the manufacture of cellulose acetate in the late 1920s and in 1931 started commercial production of acetate yarn. The Longview facilities are still in the construction stage.

ROME, GA.—Anchor Rome Mills, Inc., last month announced plans for an expansion program which will cost several million dollars and will require from two to three years for completion. The construction program calls for the complete remodeling of 48,000 square feet of floor space at Anchor Rome's present location of facilities which previously have not been in operation. An additional 21,000 square feet of floor space will be erected. The new area will be used to house a card room and a picker room, requiring the installation of new machinery, which has already been purchased. Plans call for a 25 per cent increase of the mills' products and increased employment in textile manufacture. A rehabilitation program is already in process, including the renovation of company houses and the erection of new dwellings.

GREENVILLE, MISS.—Alexander Smith & Sons Carpet Co. has contracted for the erection of a new carpet mill in Greenville. Plans call for the construction of a completely modern, integrated carpet mill for the manufacture of a new type Axminster fabric in both narrow and broadloom

widths. All processes from raw materials to the finished product will be carried out under one roof in a straight-line production operation. It is hoped that construction on the new mill can be started by early Spring, provided national mobilization needs or government restrictions do not interfere. The plant is expected to cover approximately 600,000 square feet of floor space and will probably employ about 300 people on a one-shift basis. The arrangement between Alexander Smith and Greenville calls for erection of the building at the expense of the City of Greenville, with the company investing around three million dollars for the necessary production equipment. Construction of a new mill in the South is part of a large-scale modernization and expansion program to be carried out by Alexander Smith. The company announced plans to completely realign and modernize facilities at its Yonkers, N. Y., mill. Streamlining of the Yonkers mill, the world's largest carpet manufacturing unit, is expected to cost between seven and ten million dollars.

GREENSBORO, N. C.—The 26th annual report of Burlington Mills Corp., mailed to stockholders Jan. 3, reports a growth and expansion of the company that added more than $23,000,000 to gross plant and equipment figures during the past year. The report also records the largest unit volume sales in the history of the textile enterprise that maintains executive offices here. Dealing with Burlington Mills' growth and development during the past year, Chairman J. Spencer Love said that this 12-month period "has witnessed continuation of the broad growth and expansion characteristic of the company since its founding. He reported to stockholders that the more than $23,000,000 added to gross plant and equipment during the year was spent in three broad categories. He listed these as: (a) expansion of facilities to make more efficient, flexible and economical operations; (b) purchase of existing facilities, most important of which were the Brighton plants in Georgia; and (c) purchase and evolution of additional machinery in order to develop fabrics, products and processes from the new and improved man-made fibers which are constantly coming out of the research programs of the chemical industry. He added that the coming year will witness a continuation of this capital program, with expenditures budgeted at $20,000,000. "Any program in the changing field of modern textiles is a continuing one," he added. "Burlington's emphasis on improvements has reflected itself in steadily satisfactory earnings and returns and has asured it a position of unquestioned leadership in the textile fabricating field."

JACKSONVILLE, ALA.—By early February, production at Profile Cotton Mills here will be "at least 80 per cent war goods," according to Henry E. Miller, vice-president and general manager. Production at the plant, formerly consisting largely of upholstering and drapery material, lace curtains, velveteen and shoulder padding material, will now be concentrated on twill duck for machine gun belting, tents, gun coverings and parachute harness. Machinery needed for expanded production could not be bought at once, Mr. Miller said, so the mill leased enough to get started. They were brought to the plant in trucks from Lowell, Mass., and crews of machinists from Spartanburg, S. C., and Atlanta, Ga., began installing them in December. The 1,400 bales of cotton formerly required to produce the mills' usual line of civilian goods will be stepped up considerably when the company has fully converted to turning out vital war goods, Mr. Miller said. He predicted that by the time full production under the new war contracts is attained that the number of men and women on the pay roll will have swollen from 500 to 700. To take care of expanded operations, the company has taken over a building, originally erected for use as a government bonded warehouse, which adjoins the mills. The mill has 41,000 spindles.

MCCORMICK, S. C.—Work has started on an 87,000-square foot addition to the McCormick Spinning Mill's worsted yarn plant, it was announced here Jan. 12 by R. C. Edwards, general manager of the Abbeville group of Deering, Milliken Mills and by Charles N. Plowden, director of the state research, planning and development board. Construction, which will be done by the Daniel Construction Co. of Greenville, probably will be completed by July 1 to provide jobs for between 60 and 75 workers in addition to the 550 now employed in the mill. Forty thousand square feet of the addition will be used to process new synthetic fibers in conjunction with wool and for a wool top dyeing operation, Mr. Edwards said. The rest of the addition will be

WESTOVER MILLS, INC., recently formed at Honea Path, S. C., will occupy the 90,000 square-foot building sketched above. Contract for construction has been awarded to Daniel Construction Co. of Greenville. When completed, the plant will have 400 to 500 looms on synthetic fabrics. Names of the plant's stockholders have not been announced.

used for warehouse space but will be available for production facilities when conditions farrant. This addition is the second since the modernistic McCormick plant was constructed shortly after the war. In 1948, a wing 200 feet by 80 feet was added to the original 512-foot by 200-foot mill and at that time a temporary wall was constructed in anticipation of the newer addition.

OLD FORT, N. C.—The big new addition to Clearwater Finishing Co., a division of United Merchants & Manufacturers, Inc., is expected to be put into operation about March 1. It is expected to double the capacity of the present plant for dyeing and finishing rayon, nylon and other synthetic fabrics.

GREENSBORO, N. C.—Construction has been started on a two-story brick building opposite the Proximity Plant office of Cone Mills Corp. here to house the firm's laboratory and sample and printing department. The building will cost about $200,000 and is expected to be completed the latter part of April.

ENOREE, S. C.—A $2,000,000 expansion project is now under way at Riverdale Mill. The expansion is part of a move to convert the mill from its present coarse cloth goods production to lighter goods. The number of employees will not be changed, it is reported. Completion of a 70,000 square-foot addition to the present building is expected early this Spring and some of the added machinery will go into operation in late March or early April. Materials and machinery have been contracted for and most has been delivered. New equipment includes 262 new Draper looms which will increase the total number of looms to 813. Engineer for the expansion project is J. E. Sirrine Co. of Greenville, S. C.

FOUNTAIN, INN, S. C.—A safety plaque marking more than two years without a lost-time accident was presented to the Fountain Inn Plant of Woodside Mills Jan. 6 at a barbecue supper held in the Fountain Inn High School gymnasium. General Manager J. F. Blackmon of the Woodside chain presented Charles Garrett, safety director, with the plaque from the National Safety Council.

ANDERSON, S. C. — Arrangements have been completed for building a new Fiberglas yarn manufacturing plant in Anderson, Harold Boeschenstein, president of Owens-Corning Fiberglas Corp., Toledo, O., announced Jan. 8. "Current large military requirements for Fiberglas yarns, placed on us to fulfill demands of the armed forces, have necessitated adjustment and expansion of plans contemplated since early 1950 for increasing our textile production facilities to meet the growth in demand for Fiberglas yarns in industrial and decorative uses," Mr. Boeschenstein said. "This situation has accelerated and required an adjustment in our plans," he stated. Excavation work and site grading are starting immediately, Mr. Boeschenstein said. Production will begin about the middle of 1951 with an initial working force of approximately 200 men and women employees, virtually all of whom will be recruited from the Anderson area, he

reported. Decision to center the Fiberglas yarn operations in Anderson was made after studies of prospective sites throughout the country. "We decided upon Anderson as an ideal location," said Mr. Boeschenstein, "because it offers a combination of outstanding advantages: an adequate supply of the natural gas we need for uninterrupted year-round production; proximity to many textile firms who are or may become our good customers, and a fine group of men and women residents from whom to select our working staff. We are fortunate to be in a community that is desirable both as a place to live and to work," the president added.

JONESVILLE, S. C.—Jonesville Mills is the new name of the division of J. P. Stevens & Co., Inc., located in Jonesville in Union County. Formerly known as Wallace Mfg. Co., the change in name of the Jonesville Plant became effective Jan. 1. Jonesville Mills is the primary industry in its particular area, and manufactures carded cotton sheeting. It is operated as a division of J. P. Stevens & Co., Inc., by the following managerial personnel: R. C. Emery, executive vice-president and executive officer; George P. McClenaghan, vice-president and assistant executive officer; Brown Mahon, assistant to the executive officer; R. Carter Henry, manager; and E. Douglas Patton, superintendent.

For The Textile Industry's Use

EQUIPMENT – SUPPLIES – LITERATURE

Ball Bearing Catalog

The new 20th edition of the New Departure ball bearing catalog, now ready for distribution, contains added features of interest and value to ball bearing users. Selection of bearing type and size for various conditions of load and speed is considerably simplified and illustrated by examples. Load rating tables now give both radial and thrust capacities for all bearings except those types which are designed for certain specialized services, and speeds now have been arranged to include those for synchronous motors. Several more types of single row and double row angular contact bearings have been added. Copies of the new catalog will be mailed upon request to New Departure Division, General Motors Corp., Bristol, Conn.

Uni-Pull Drive Manual

This book, released through the American Leather Belting Association, enables the reader to select, without any calculation, the proper size of flat leather belt; i.e., width, thickness and length, together with the pulleys of the correct dimension, both driver and driven, to transmit power from a motor of a given horsepower and speed to a machine to be operated at a prescribed speed. Tables are also included in it from which a belt tension controlling motor base of any manufacture can be selected for all motors built in standard NEMA frames. The book also contains the basic horsepower rating data for flat leather belting, recommended minimum pulley diameters, motor frame mounting dimensions and other pertinent drive information. Copies of the Uni-Pull Drive Manual are available through either the American Leather Belting Association, 41 Park Row, New York 7, or any leather belting supplier.

New Pyrometer Equipment

New pyrometer equipment, which offers accurate temperature indication, close temperature control of industrial processes and protection for furnaces, ovens and kilns, has been announced by General Electric's Meter and Instrument Divisions. The complete line consists of flush or surface-mounted indicators, controllers and protectors.

Designed for industrial applications that include heat treating furnaces such as cloth-treating ovens, the instrument has a calibrated accuracy within three-quarters of one per cent of full scale. A legible seven-inch scale, fitted with an anti-glare cover, indicates any change in temperature equivalent to one-tenth of one per cent of full scale. Immediate control action follows. Normal changes in humidity, ambient temperature and voltage have little or no effect on the exactness of the control action.

The heart of the indicating instrument is a 3¼-pound magnet, which provides higher flux density and allows larger air gaps than are found in conventional instruments. Foreign matter will not impair the operation of the instrument since the indicator is so sealed that it can be installed in humid or dirty locations. The indicating device is a millivoltmeter that is connected to a thermocouple on the furnace or other heating equipment. The difference between the hot or cold junctions of the thermocouple causes small voltages. These voltages, being proportional to the temperature, are indicated on a scale marked in Farenheit or Centigrade.

The Type HP-3 controller provides on-off action of the final control element by either a relay, mercury switch, or a contactor through which electric power is supplied to the furnace or oven. The pyrometer protector, a separate form of the HP-3, is usually used in conjunction with and to protect against the possible failure of a separate precision controller.

Hinnekins Names Agent

Lucas Associates, Inc., Charlotte, N. C., has been named Southern sales representative for Hinnekins Machine Co., Inc., Paterson, N. J., manufacturer of textile dyeing and finishing machinery including continuous boil-off equipment. The Charlotte firm will cover the Southeastern territory below Washington, D. C., and embracing Louisiana and Texas. Previously, Hinnekins had no direct representation in the South.

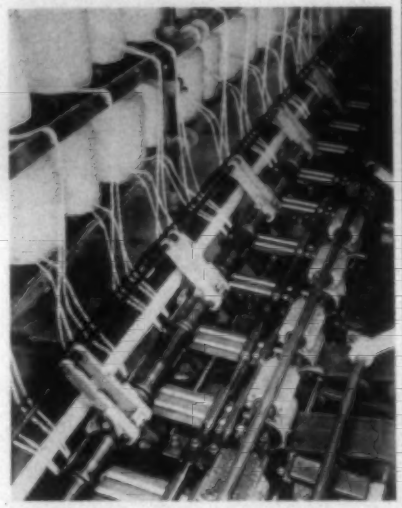
New Variable Height Weir

Riggs & Lombard, Inc., Lowell, Mass., maker of the Fleet Line of wet finishing and drying machinery, have recently announced a new variable height weir for their new Laxloop continuous washer. This weir is part of a system designed to assure a positive counter current flow of liquor, with uniform predetermined level in each tub. Each tub is equipped with a variable height

RAPID CUSTOMER SERVICE BY RODNEY HUNT MACHINE CO. OF ORANGE, MASS., is assured through use of the firm's Beechcraft Bonanza and radio telephones installed on the dashboards of salesmen's automobiles. L. M. Phillips, New England-New York area sales engineer for Rodney Hunt's textile machinery division, is pictured making a report to his office.

weir and all liquor which flows over this weir is pumped to the preceding tub by a stainless steel, flooded suction, low-head type pump. Thus it is possible to maintain proper operating level in each and every tub while maintaining maximum counter current flow of liquor.

New Superdraft



Stellite American Corp. (representing Stellite Soc. In Acc. Semple, Milan, Italy) announces that Textile Machines S.P.A., Isotta Fraschini, has just developed a new superdraft for porcupine drawing frames. This development has proved to be outstanding and considerably improves the operation of porcupine drawing frames, the firm states. The principal idea is that the roving is transported by aprons which make it possible to increase drafts by more than 50 per cent and to apply higher speeds. The illustration shows such a machine equipped with a new superdraft device.

This superdraft can be supplied either with new machines or can be supplied as individual units for any other make of porcupines. The advantages can be summed up in the following six points: (1) Draft increases from average four-4.3 to seven and in special cases where long wools are processed up to ten. (2) The processing speeds can be increased by approximately 20 per cent up to around 31 yards per minute. (3) The sliver breakages are reduced and the waste cut down. (4) The device assures quality improvements. (5) Through increased draft at least one drawing operation can be eliminated so that considerable savings are achieved. (6) The price of the device makes it certain that the new investment will pay for itself in some cases in less than half a year.

New Milne Co. Bulletin

A new bulletin published by A. Milne & Co., New York, describes a new product being supplied by the company . . . steel bar stock, cold drawn in special sections to fit specific purposes. The bulletin points out that the pre-shaped feature eliminates many machining operations in the production of steel parts for machines and other products. In some cases, machining may be reduced to a simple cut off operation;

FOR THE TEXTILE INDUSTRY'S USE—

drawings of some typical pre-shaped steel sections are shown and an indication is given of the various analyses in which this specialty stock is available. A free copy of this bulletin can be obtained by requesting Bulletin AM-100 from A. Milne & Co., 745 Washington Street, New York 14, N.Y.

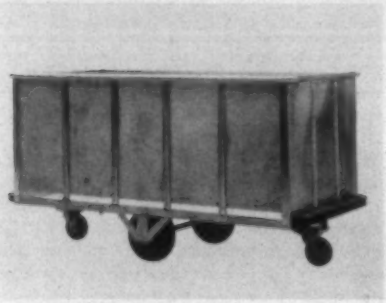
Oakite Service Report

How a new reed-cleaning procedure removes oil, grease, dye, sizing, weave room dirt and rust from loom reeds in one operation, is described in a special Service Report just issued by Oakite Products, Inc., New York, manufacturer of industrial cleaning and allied materials. This simplified reed-cleaning method merely calls for manual brushing of reeds with Oakite Compound No. 36, a mildly-acidic material that simultaneously removes soil and rust deposits from reeds in minimum time, the Service Report states. Also described is a special anti-rust treatment designed to protect newly-cleaned reeds from rust while they are in storage awaiting re-use. In addition to an interesting description of this manual reed-cleaning procedure, the Service Report also provides helpful data on specialized material and methods for machine cleaning of reeds. Readers desiring free copies of this Service Report should address Oakite Products, Inc., 157 Thames Street, New York 6, N. Y.

Molded Fiberglas Bobbin Boxes

Snagged yarn from rough rivets or bolts, splintered wood rail or broken inside corners is said to be a thing of the past with the introduction by the Westport Fibre Corp., of its molded Fiberglas bobbin boxes. The biggest reason for this elimination of waste is that this new product uses no rivets, screws, bolts, or wooden reinforcements. These bobbin boxes are of one-piece molded construction with smooth inside finish and rounded inside corners. They are premanently colored. With their strength, they are still said to be lightest box on the market and are available in five standard sizes and can be supplied for self-stacking or nested.

Market Forge Truck



This outstanding stainless steel truck was designed by Market Forge Co., 25 Garvey Street, Everett, Mass., expressly for handling textiles in dyeing and finishing plants. The bottom of the truck is higher in the center than on the sides, to facilitate the flow of the draining fluid through the side openings. The sides and ends of the truck are carefully reinforced with separate ribs of stainless steel for greater strength. The top edge is also reinforced, and rubber bumpers are furnished on the ends.

Due to this specialized design and to the stainless steel construction, the truck is highly resistant to the corrosive action of the chemical used in textile dyeing and finishing. They are also very easy to keep clean and their use results in excellent quality control of fabrics.

All wheels are made of cushion rubber and have roller bearings. Plastic wheels, semi-steel, or Neoprene wheels can be furnished to suit individual requirements. Specifications of the unit are: capacity, 2,000 pounds; length inside, 72 inches; width inside, 36 inches; depth inside, 28 inches. Running gear consists of 12-inch

by 2½-inch bull wheels with roller bearings and swivel casters six inches in diameter and two-inch face.

A.M.A. Pamphlets

Personnel and economic problems facing management in the mobilization period ahead are analyzed by leading business, union and government spokesmen in two pamphlets just issued by the American Management Association.

Personnel Problems Under Mobilization (Personnel Series No. 135) includes papers on "Security and Loyalty Considerations in Personnel Administration," in which Willard V. Merrihue describes the internal security program of General Electric Co.; "Planning for Industrial Mobilization" by Duncan J. Morgan, director of human relations, ATF, Inc.; "Forseeable Selective Service Requirements" by Col. Daniel O. Omer, general counsel, Selective Service System; "Effective Recruitment and Utilization of Manpower" by A. W. Motley, assistant director, U. S. Employment Service; and "Economic Policy Faces the Future" by Leon H. Keyserling, chairman, Council of Economic Advisers. Also included are two papers on economic education for workers by Ernest H. Hahne, president, Miami University, and C. Scott Fletcher, president, Encyclopaedia Brittanica Films, Inc.

Wage Policy and Problems in a Preparedness Economy (Personnel Series No. 136) discusses the impact of the mobilization program upon wages and salaries and upon various aspects of collective bargaining. Papers include "The Thinking Behind the General Motors Agreement" by Louis G. Seaton, director of labor relations, General Motors Corp.; "Impact of Mobilization on Company Wage and Salary Structures" by Richard C. Smyth; "Collective Bargaining in a Transition Economy—A Trade Unionist's View," by George W. Brooks; "Economic Issues in Labor-Management Relations" by James J. Healy; and a discussion of "Trends in the Wage and Salary Picture" by N. Arnold Tolles. The publications are available at $1.25 each from the association at 330 West 42nd Street, New York 18, N. Y.

Print Washing Assistant

Atlantic Chemical Co., Inc., announces a new product for print washing. The product, Atconil PW-35, has been developed following a thorough study of the chemical properties necessary to bring about the complete removal of loose color and gums in the print washing operation. A.T.C.O. research has established that insufficient print washing is conducive to dull shades, poor crock fastness, bleeding on soaping, and uneven finishes. The new A.T.C.O. product has gum dissolving properties which are outstanding and it is an excellent dispersing agent for loose and unfixed color. Foaming properties of Atconil PW-35 have been adjusted so that a light foam forms on the surface of the bath, preventing scum formation, and also gives an indication of the condition of the scouring liquor. Atconil PW-35 creates more brilliant prints, pro-

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motes thorough washing, improves white grounds and discharges whites, and thoroughly removes gums for better finishes. Recommended use of Atconil PW-35 is in a 0.1 per cent concentration at temperatures ranging from 115° F. to the boil. Complete information on this new product and trial samples are available by writing direct to Atlantic Chemical Co., Inc., Centredale, R. I.

Draper Expansion

Due to the demand for Draper products, directors of Draper Corp. have voted to increase the capacity of the firm's East Spartanburg, S. C., plant. By the installation of additional machine tools and especially of the most modern and up-to-date mechanized equipment in the foundry, production will be more than doubled. Floor space has been increased in the plant to accommodate the additional machinery, and the Spartanburg warehouse and offices have been enlarged. Completion of this program will bring the amount invested by Draper in its Spartanburg plants this year and last to over 1½ million dollars. For the present the East Spartanburg plant will only manufacture repair parts and equipment for the Southern mills. The planned production increase is expected to improve the delivery of loom parts.

Sjostrom Greenville Branch

It has recently been announced by Sjostrom Machine Co., Lawrence, Mass., manufacturer of textile machinery, that a manufacturing branch and sales office will be opened in Greenville, S. C., the early part of 1951. Land on the outskirts of Greenville has been purchased and a one-story building, 50 by 100 feet, together with an office extension will be erected. It is planned to employ approximately 20 persons with an annual payroll of $60,000. Sjostrom Machine Co. manufactures textile specialties and folding and cutting machines. The firm was founded in Lawrence, Mass., in 1872 by the grandfather of the present owner, R. L. Sjostrom.

Watson & Desmond Moves

Watson & Desmond, the mill supply firm with principal headquarters at Charlotte,

N. C., is celebrating the completion of its fifth year in business by moving its offices from 218½ West Fourth Street to larger, air conditioned space in a new building at 301½ West Fourth Street, Charlotte. Clifton E. Watson and S. P. V. Desmond are partners in the firm, which represents Watson-Williams Mfg. Co. and other supply firms in the South. Branches are maintained at Greensboro, N. C., and Greenville, S. C.

New Niacet Catalog

A new 52-page catalog on "Niacet Synthetic Organic Chemicals" presents in detail the physical and chemical properties, latest specifications, applications and shipping and handling information on Niacet's line of chemicals. A water-repellent treatment with Niaproof powder is described as well as data on acetic acid, sodium acetate, vinyl acetate, acetaldehyde, acetonitrile and 12 other organic chemicals. Copies may be obtained from Niacet Chemicals Division, 975 Niagara Building, Niagara Falls, N. Y.

Keyed to stepped-up production in many industrial plants, and the employment of many new workers, Towmotor Corp., Cleveland, is providing a safety kit to manufacturers in many areas.

Serving The Textile Industry

Dixie Textile Machine Co.

By DAVID CLARK, Editor

IN 1948, A. A. (RED) BRAME, as agent for a Northern firm, took a substantial size order for loom reeds from one of the largest mill organizations, only to find that the firm he represented could not make deliveries for several months. Back in his home town of Greensboro, Mr. Brame wondered if he could not manufacture reeds and be able to supply the needs of mills. He found a Swiss who had had experience in the manufacture of loom reeds and he induced several men who were working for the other loom reed companies to become stockholders and employees of the Dixie Textile Machine Co. which he decided to form. The four men who constituted the original working force were all stockholders and over one-half of the present employees are stockholders.

The Dixie Textile Machine Co. was organized upon the American Plan and its labor turnover has been less than one-half of one per cent. Their first building was a former latrine in the abandoned army camp in Greensboro, but they are now located in a building at 801 McCormick Street, the location being one-half block from 1300 Lee Street, which is one of the principal thoroughfares in Greensboro.

With Red Brame as the dynamic leader and with nine men with a combined experience of 145 years in the manufacture of loom reeds and similar operations, the Dixie Textile Machine Co. has been a distinct success and has established a large business with textile mills. They do a substantial business with New England mills and have customers in Cuba and Spain.

They have imported from England a number of high efficiency machines for the manufacture of pitch blend loom reeds and all-metal reeds for rayons.

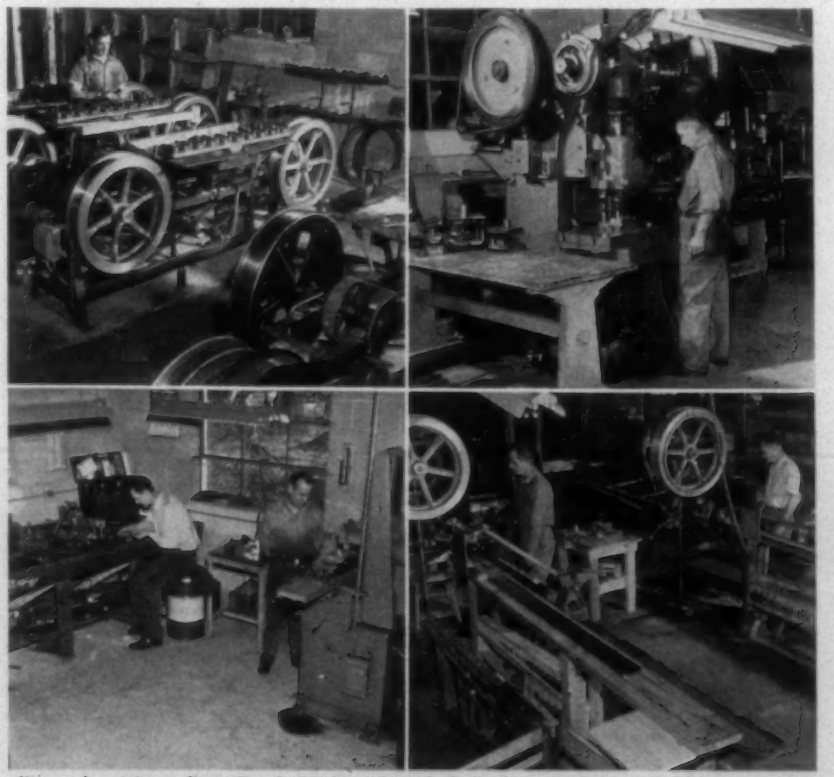
They have one machine which will make reeds 150 inches wide and claim that there is no other machine like it in the United States. It was very interesting to watch the operators of the machines which flattened the wire, brought it to the size and shape described for the reeds and gave it the right polish. The pitch blend reed department was in charge of M. W. Blair while Jules May had charge of the all-metal reed making.

An entirely separate department, but one which did a very large volume of business was die making. It was in charge of two expert mechanics, James Scott and H. H. Heath. It included a 54-ton press and ovens for tempering steel. They turn out balanced weights for twister bobbins and were working on large metal reed cap plates for the Dan River Mills who were changing from wood to metal caps.

The die stamps department had already begun to work on war orders and they expected to have to turn to a much increased business for the Army and Navy.

Making dies is a business which requires expert workmen and great care but they seem to be doing an excellent job.

From a small beginning, A. A. (Red) Brame has, with the assistance of co-worker stockholders developed a very fine and successful business at 801 McCormick Street in Greensboro and it was impossible to visit his plant without catching some of his enthusiasm for the future.



Views of activity at Dixie Textile Machine Co. *(clockwise from top left)*: polishing wire, metal stamping, die department, and setting pitch on metal reeds.

Full Production For Machinery Industry Urged

The industry advisory committee of the National Association of Textile Machinery Manufacturers last month filed a brief with the National Production Authority in Washington stressing the essentiality of the textile industry and the textile machinery industry to the war effort and the civilian economy, and requested the government to permit the industry to produce at capacity "in full support of textile mills."

A synopsis of the brief, as released by the association, follows, in part:

"In anticipation of a new war emergency the textile machinery industry has declared its facilities to be at the disposal of the government in any capacity whatsoever; but in an effort to forestall a repetition of the errors of World War II, it earnestly solicits careful consideration by the government of the facts and conclusions set fort in this statement.

"Textiles were second in importance only to steel in World War II. The textile industries (2,500,000 employees) are completely dependent on the textile machinery industry for new machinery and for maintenance, repair and operating supplies. In supplying and maintaining these essential industries the textile machinery industry requires only 56,000 employees and consumes negligible quantities of critical materials. The essential nature of this relationship was underestimated at the beginning of World War II and the consequent impairment of the textile mills' production capacity jeopardized fulfillment of the special needs of the military forces and resulted in failure to meet overall military and civilian requirements.

"Despite this World War II error on the part of government planning, the textile mills, in addition to supplying special items such as tire cord fabric, succeeded in expanding normal fabric production by approximately 40 per cent. Direct military procurement took roughly 50 per cent of national production of textiles and total priority goods on order and in production ran much higher, reaching 80 per cent of cotton goods at one time in 1943.

"With a population increase of about 10,000,000 in the last decade, civilian consumption of textiles is now at a high level. Any war emergency will doubtless last much longer than either of the last two wars and even minimum military and civilian requirements will multiply the volume and variety of the demands on the country's textile production capacity. The textile machinery industry will become correspondingly more essential.

"Machines and equipment now in the textile mills are incapable of supporting even minimum military and civilian estimates during a long war emergency. Available textile machinery has decreased substantially since 1939. Much of this machinery is worn or obsolete, 50 per cent of existing cotton looms being over 20 years old and at least 40 per cent of existing cotton spindles having been installed before 1914. New production has been used for replacement which should have been made during World War II or even during the pre-war depression. On an over-all basis equipment abroad is in worse condition than facilities in this country.

"Vastly more textile producing facilities than now exist will be needed to produce the textile requirements for a future war. In any event it is absolutely essential that the textile industries be able to obtain machinery for special programs and to procure maintenance, repair and operating supplies. It is equally essential that the textile machinery industry be kept in a position to supply these facilities and service effectively.

"For the present the textile machinery industry should be kept producing textile machinery at full capacity and in the event of war any conversion of this industry to war production should be deferred as long as possible and then held to a minimum with adequate provision for full performance of its functions of furnishing maintenance, repair and operating supplies. In support of this program the industry should be granted high priorities for materials, manpower and other facilities under existing and future regulatory orders and should be free of such restrictions as may jeopardize its performance of these essential functions. To the extent feasible the textile industries and the textile machinery industry should be consulted and regulated as one essential unit. Basic planning for utilizing this unit in the event of war should be started immediately."

Cotton Textile Merchants Elect Dribben

Saul F. Dribben, president of Cone Export & Commission Co., Inc., New York, was elected chairman of the board of the Association of Cotton Textile Merchants of New York, at a meeting of the board of directors held Jan. 5. The office of chairman of the board was newly created at the meeting of the directors. Mr. Dribben has previously served as vice-president of the association, and is chairman of its industry committee which has done extensive work over many years, serving with particular distinction in World War II and in organizing the defense efforts of the market since the outbreak of the Korean War. The new board chairman is also vice-president of Cone Mills Corp., Greensboro, N. C. He has served as chairman of the committee on foreign commerce of the Chamber of Commerce of the State of New York, and is now a member of the chamber's executive committee. He is chairman of the advisory board of the textile office of the Chemical Bank & Trust Co. of New York. In both World Wars I and II he served on various government advisory committees for the textile industry.

Texas Beauty Named 1951 Maid Of Cotton

A beauty from the nation's largest cotton-producing state, Jeannine Holland, Houston, Texas, was named 1951 Maid of Cotton at contest finals in Memphis, Tenn., Dec. 28. The 21-year-old Maid was a senior at Texas State College for Women at the time of her selection. Named as first alternate to the Maid was brunette Eleanor Chalmers, San Luis Obispo, Calif. The 20-year-old Phi Beta Kappa student at the University of California previously had won the California state Maid of Cotton contest. Chosen second alternate was brown-eyed, 20-year-old Jean Neal, Greenville, S. C., who represented South Carolina as its state Maid of Cotton. The South Carolina Maid conducts her own daily radio program for teen-agers on a Greenville station.

The 1951 Maid is the second Texan ever to be selected for the coveted honor of representing the cotton industry as its fashion and goodwill emissary. Matilda Nail, Ft. Worth beauty who is now Mrs. Tully Petty of New York City, made the tour in 1948.

The 64,000 mile international tour will be an especial thrill for the 1951 Maid, for most of her traveling to date

has been in Texas. The Maid of Cotton journey will carry her to 35 major United States cities from the Atlantic to the Pacific Coast, plus a trans-Atlantic trip to London and Manchester, England and Paris. Early in June the Maid will return to her home town of Houston to board a Braniff El Conquistador airliner for a three-week visit to six Latin American nations. Her Latin American itinerary includes Cuba, the Canal Zone, Peru, Argentina, Brazil and Uruguay. She will be the first Maid ever to visit Central and South America.

Textile Technologists Elect G. H. Hotte

George H. Hotte of A. M. Tenney Associates has been elected president of the American Association of Textile Technologists, it was announced Jan. 3 at a meeting of the association in New York City. Election was by letter ballot and the officers for the current year assumed office. Walter E. Scholer of American Viscose Corp. was named first vice-president and Erb M. Ditton of Gotham Hosiery Mills, second vice-president. Bernice S. Bronner of the Textile Resin Department of American Cyanamid Co., secretary and Olen F. Marks, Industrial Rayon Corp., treasurer, were re-elected.

Elected as members of the board of governors for three years were: Bert I. Bertelsen, Botany Mills, Inc.; Gerard Lake, Pepperell Mfg. Co., and Charles H. Ochsner, Burlington Mills Corp. Board members who will serve two additional years and were not subject to election at this time are Leonard S. Little, E. I. du Pont de Nemours & Co., Inc., and Miss Irene Blunt, National Federation of Textiles. Governors who have one year more to serve are Ephraim Freedman, R. H. Macy & Co. and Richard T. Kropf, Belding Heminway Co., Inc. Officers who retire are Dr. George E. Linton, Fashion Institute, president, and Stephen S. Marks, *Daily News Record*, first vice-president.

Alabama Manufacturers To Meet April 12-14

The 1951 convention of the Alabama Cotton Manufacturers Association will be held April 12-14 at the Hotel Buena Vista in Biloxi, Miss. The meeting will be in observance of the association's 50th anniversary. A collection of pictures of mills within Alabama from reconstruction days to the present, depicting the growth and development of the textile industry in Alabama, will be displayed at the convention. Plans also are being formulated to honor all past presidents of the organization. Present officers of the group, whose terms expire in April, are Thomas D. Russell of Russell Mfg. Co., Alexander City, president; Paul A. Redmond, Jr., of Alabama Mills, Inc., Birmingham, chairman of the board; Joe L. Jennings, vice-president; and D. H. Morris, III, of Geneva Cotton Mills, treasurer. Dwight M. Wilhelm is permanent executive vice-president of the association.

Quartermaster Textile Requirements Outlined

Tentative estimates of Army Quartermaster Corps requirements for cotton, wool and synthetic textiles to meet the needs of its current procurement program, and plans for purchasing wool textiles under the wool reserve program have been announced by the Department of the Army. The tentative estimates, it was explained, are based on the best information available at this time, are subject to modification, and do not include items currently being purchased. The estimates are being announced in order to assist industry in planning production.

The current fabric procurement program, covering requirements of the Army and Air Force, calls for approximately 104 million yards of cotton uniform cloth, 31 million yards of wool, 14 million yards of synthetics, 28 million yards of light fabrics for tentage, 24 million yards of duck, and 134 million yards of webbing. As soon as the Navy submits its requirements for duck and webbing the duck and webbing yardage total will be appropriately increased. Deliveries under the current procurement program will be completed by Oct. 1, 1951, with the bulk of deliveries anticipated in the first six months of the year.

The wool reserve program provides for the purchase of 31 million yards in eight types of textiles for use of the Army and Air Force. Although deliveries under the wool reserve program may extend to June 1952, delivery dates will vary for different items and accelerated deliveries will be arranged if market conditions permit.

Procurement of wool textiles under both programs will be phased in a planned sequence to be announced later, depending upon the availability of specific wool types and in accordance with the best trade practices. Contractors will make their own purchases of wool for both programs.

Detailed information on individual procurements will be released with the institution of each procurement action. The entire textile procurement program will be handled by the New York Quartermaster Procurement Agency, 111 East 16th Street, New York 3, New York.

House Passes Textile Machinery Bill

The House of Representatives last month passed a bill allowing "any society or institution" established solely for educational, religious or charitable purposes to import the latest types of textile machinery free of import duties. The machines would have to be used for instruction of students, and not for sale or commercial use. In the brief debate to passage of the amendment to the tariff act of 1930, it was disclosed that development of a novel cloth weaving machine in Switzerland had prompted the legislation. Accordingly, Chairman Harold Cooley, North Carolina Democrat, of the House Agriculture Committee, introduced the bill.

Ga. Manufacturers To Meet May 16-18

The 1951 convention of the Cotton Manufacturers Association of Georgia will be held at the Sheraton Plaza and Princess Issena Hotels, Daytona Beach, Fla., on May 16-17-18, 1951, it has been announced by the association's Atlanta office. As in the past four years, convention headquarters will be at the Sheraton Plaza, the facilities of which will be reserved for association members only. However, some activities, including the 51st annual banquet, will take place at the Princess Issena Hotel.

The convention will open officially on Wednesday evening, May 16, 1951, with a reception, and those expecting to participate in all activities should plan to arrive on this date. The first business session, golf tournament and annual banquet will be held on Thursday, May 17, while the final business session and buffet supper will close the convention on Friday, May 18.

All reservations for textile mill executives are to be made through the association's office. However, at the proper

time, non-members will be asked to make their own reservations in accordance with a procedure that will be announced. The full facilities of the partially air-conditioned Princess Issena Hotel will be available, with limited accommodations at The Whitehall, Sun & Surf and Seabreeze Manor Hotels.

L. G. Hardman, Jr., president and treasurer of the Harmony Grove Mills, Commerce, Ga., and 1950-51 president of the Cotton Manufacturers Association of Georgia announces that the officers already are at work on convention plans, and that they hope to arrange an interesting and outstanding program for the 51st annual meeting of the Georgia textile mill officials.

A.A.T.T. Conference On New Military Fabrics

To provide suggestions in the development of new fabrics for the armed forces, the American Association of Textile Technologists has arranged a full day "Conference on New Fabrics for the Armed Forces" to take place on Wednesday, Feb. 28, at the Hotel Commodore in New York City. The program seeks to provide an exchange of views of some of the industry's leading technologists regarding fabrics now under study for military purposes. The morning session will be given over to a consideration of the apparel fabrics required by Army, Navy, Marine Corps and Air Force. After an industry lunch, there will be an afternoon technical session at which new needs of the Air Force for filament fabrics will be discussed. In the preparation of the program, the association has the active co-operation and participation of the textile technical sections of all of the branches of the Services.

At the industry luncheon, A. E. Buchanan, assistant general manager of the rayon department of E. I. du Pont de Nemours & Co., Inc., will be the keynote speaker. Dr. Milton Harris, president of Harris Research Laboratories, will be chairman of the panel discussion which will be part of the two technical sessions. The morning session is planned to commence at 9:30 a.m., and will start with a presentation of some of the new requirements of the services for fabrics and finishes. This will be presented by a group of men under the chairmanship of Dr. Stephen J. Kennedy, director of the Textile, Clothing & Footwear Section, Research & Development Branch of Military Planning Division of the Office of the Quartermaster General.

Following this presentation by the Armed Services, a panel of textile technologists under the chairmanship of Dr. Harris will discuss the various requirements and bring out through discussion the ability of the industry to create cloths or finishes to supply the needs. The panel will comprise technologists who are leaders in the various branches of the textile industry.

After the luncheon, at which Mr. Buchanan will be the only speaker, those attending the conference will proceed to the afternoon conference on filament fabrics for the Air Force. At this session, the new requirements of the Air Force will be presented by a group of specialists from the Wright-Patterson Air Force Base, Dayton, Ohio. These will include C. D. Huxley, chief of the Clothing Branch of the Aero-Medical Laboratory; J. E. Walker, assistant chief of the same laboratory; Maj. Richard Barnes, Parachute Branch, Equipment Laboratory and William A. Corry, chief of the Textile Unit, Air Material Command, U. S. Air Force. Following this there will be another discussion by a panel of technologists specially versed in related fields. This panel, too, will be under the chairmanship of Dr. Harris.

Participation in the conference, including luncheon, will be $8.50 and no arrangements will be made for partial attendance. Admission will be made by ticket only and in addition to individual admissions, textile firms may arrange for tables of ten. Reservations will be received by James Jonas, of Pellissier, Jonas & Rivet, Inc., Room 6800, 350 Fifth Ave., New York 1, N. Y., and checks should be made out to the association.

The luncheon will be under the chairmanship of the association's new president, George Hotte of A. M. Tenney Associates, Inc. General chairman of the conference is Stephen S. Marks, *Daily News Record,* and other members of the committee include Leonard Little, E. I. du Pont de Nemours & Co., Inc.; George Linton, Fashion Institute; Walter Scholer, American Viscose Corp.; Miss Irene Blunt, National Federation of Textiles; George Baxter, Bradford Dyeing Association; Joseph Hirsch, Cyril Johnson Woolen Mills; Gerard Lake, Pepperell Mfg. Co.; Bernice S. Bron-

ner, American Cyanamid Co.; James Jonas, Pellissier, Jonas & Rivet, Inc.; John Hagen, Callaway Mills, and Julian Jacobs, Textile Research Institute.

Dr. Heaton Appears As Gossett Lecturer

The nation's textile industry is emphasizing human relationships more today than it is technical "know-how," Dr. George D. Heaton, minister of the Myers Park Baptist Church at Charlotte, N. C., said in an address at North Carolina State College's School of Textiles, Jan. 9. Dr. Heaton's address was a feature in the "B. B. Gossett Lecture Series" and was heard by an audience of more than 400 persons. He was introduced by Dean Malcolm E. Campbell of the college's School of Textiles, who arranged the program.

"You will find," Dr. Heaton told his listeners, "that the textile industry is providing a proper blending of men, materials and machinery in a manner designed to produce a minimum of waste in materials, a minimum of wear in machinery, and a minimum of weariness in men." Dr. Heaton said that "the old tyrannies and old arrogances" of the textile industry have disappeared and have been replaced by what he termed "an understanding of the human factor."

This emphasis on human relationships, the speaker stated, is resulting in better safety records, improved quality of production, less waste, higher morale and larger quantities of goods made. He cited the program of the Du Pont Plant at Martinsville, Va., as an instance in which the company's personnel interest has resulted in 27 million man-hours of work without a major accident.

Speaking directly to the students at the textile school, Dr. Heaton said that the future success of persons entering the textile industry in supervisory and executive capacities will depend upon their ability to understand "the human factor." Factors which workers in the industry regard as most important to them were outlined by Dr. Heaton in the order of their importance as follows: credit for work done, interest in the job, wages, understanding, counsel on personal problems, and security. Supervisors and executives who flout the principles of human understanding and who do not sympathize with the interests of the workers, Dr. Heaton said, are doomed to failure in the modern textile industry.

Fiber Testing Courses Opened By A.C.M.I.

The American Cotton Manufacturers Association opened its first 1951 class in cotton fiber testing Jan. 8 in the institute's division of technical service at Clemson, S. C. The initial class will close March 2. Following is the tentative schedule of opening and closing dates for the remainder of classes in 1951: March 19-May 11; May 21-July 13; Aug. 6-Sept. 28; Oct. 15-Dec. 7. Additional information concerning this A.C.M.I. service may be obtained from John T. Wigington, director, A.C.M.I. Division of Technical Service, Box 151, Clemson, S. C.

Textile Mills Face Manpower Shortage

If the cotton textile industry should be called upon to make another all-out war effort, an additional 100,000 workers will be needed by the mills, the Textile Information Service reported Dec. 17. The big manpower need of

the industry is disclosed in a study made by Ralph E. Loper Co., textile engineers of Greenville, S. C., and Fall River, Mass., for the Textile Information Service.

In view of the recent declaration by the Quartermaster General of the Army, Maj.-Gen. Herman Feldman, that textile mill workers would hold "front line outposts in any all-out military production drive," the Loper Co. findings serve as a timely warning of a possible worker shortage in an industry whose products high military officials rated second only to metals in essentiality in World War II. "Modern warfare has taught us that we must win in the factories if we are ultimately to win on the battle fronts. Few places offer greater opportunity for service to our fighting forces in time of emergency than the textile mills," General Feldman asserted.

The engineers report that "if the industry ran full blast, making the same general type of goods that were made during 1942, we estimate the mills, with about 100,000 more employees, could produce in the neighborhood of 13 billion square yards of goods, as compared with the 1942 peak of 12 billion. The industry, we believe, could do this," the engineering firm states, "in spite of the fact that there is less spinning and weaving equipment in place now than in 1942.

"Because of the amount of old machinery replaced with new, a better balance of operations so machines are not forced to stand idle, and elimination of bottlenecks that existed in the last war," Loper Co. explains, "we estimate the industry is now in a position to top previous record production, provided enough raw material and manpower are available." According to the Loper Co., a figure of 472,000 workers, which was the average employment of this industry during the first five months of this year, was used as a base in estimating the need for additional operatives. In 1942 the industry averaged around 539,000 employees.

The study was made because the nation's surplus working force is rapidly being absorbed as the preparedness program gains momentum, particularly in the Southeastern and New England areas where the greatest part of the textile manufacturing industry is located.

Textile mill executives are concerned over the possibility of losing workers and potential workers during the present "defense emergency." Other industries are actively seeking more workers, thus narrowing the field from which textile mills can get employees. Jobs in such industries as aircraft and munitions might be a particularly strong lure because they might seem more directly connected to war service by workers who do not realize how important their work in the mills is to the nation's defense, mill executives point out.

If the industry's total number of workers is further reduced during this critical period by employees moving to other jobs, the Loper report says, and the surplus force is exhausted, the mills could not get enough workers to produce the huge yardages that would be needed if, as and when a full "war emergency" should occur. A manpower freeze then would be too late. Industry leaders feel that government and military planners should consider immediately all possible measures to assure the mills the number of employees needed for maximum production.

Only recently Robert C. Goodwin, executive director of the Office of Defense Manpower, said that millions of additional workers will be needed to staff defense plants

and to build up the armed forces. "The exact number and the exact time they will be needed is not yet known and will depend on the magnitude of the expanded defense program and the number of workers now employed in civilian work who can shift to war work," Mr. Goodwin stated.

Except for manpower the cotton textile industry is better prepared for all-out production than it was at the start of World War II. Post-war modernization and streamlining, involving the expenditure of more than a billion dollars thus far, has made the industry's facilities much more resilient, better balanced and more efficient than when it accomplished an "industrial miracle" in the last war, producing more than 20½ billion yards of cotton broad woven goods for war uses during the years 1942-1945 inclusive. This yardage for direct war use was more than 51 per cent of the unprecedented total of 39,948,900,000 yards of cotton goods woven by American mills during the four war years.

Extent of the industry's accomplishments showed in the production of vital wartime fabrics. Combed twills, of which about 26½ million yards were produced in 1939, were increased to almost ten times that amount in 1942. Cotton duck grew to five times pre-war production, and 38 per cent of the increase was effected through conversion of facilities previously used for other fabrics. Mosquito netting, originally supplied by the lace and knit goods industries, was produced by weaving mills at the rate of 1½ million yards weekly in 1943—all of it for war procurement agencies. Sanforized drill jumped from 20 million yards in 1940 to 190 million in 1942, and herringbone twill from 12 million to 195 million.

During the four war years, 1942-1945, the mills manufactured 2,033,000,000 yards of cotton duck; 1,027,500,000 yards of denim; 5,105,700,000 yards of fine goods, which included such vital fabrics as twills, sateens, poplins, oxfords, and insect nettings, among others. The fine goods mills also produced 206,400,000 yards of airplane and balloon cloth. Chambray, canton flannel, and numerous other fabrics, in staggering yardages were made directly for war use.

All of this was accomplished by the industry with no expansion in productive capacity. In fact, there were about a million less spindles in place at the end of the war than there were at the beginning. No government financed plants were established and the mills were not allowed to invest money in new facilities. Iron and steel were scarce and with machinery manufacturers forced to turn out ord-

nance, it was even difficult for the mills to replace worn out equipment and obtain parts.

In order to meet the extraordinary military requirements, the industry was forced to get maximum production from machinery on hand. The problem was solved by hiring thousands of additional employees and working multiple shifts. In 1942 there were over a half million employees in the industry compared with 394,000 in 1939; the average spindle operated 5,794 hours in 1942, an increase of 40 per cent over the average spindle operation of 4,149 hours in 1939.

Peak production could not be held, however, in the war years succeeding 1942 as the draft took its toll of the industry's workers. By the end of the war the number of employees was down about 90,000 from the peak. Production fell off from the 1942 high of 11.1 billion (linear) yards to 10.6 billion in 1943, 9.5 billion in 1944 and 8.7 billion in the final war year.

Cotton Research Clinic Slated Feb. 7-9

To step up cotton research for both civilian and military uses, the nation's top textile scientists will gather in Pinehurst, N. C., Feb. 7-9, 1951, for the second Cotton Research Clinic sponsored by the National Cotton Council. M. Earl Heard, vice-president and director of research of West Point (Ga.) Mfg. Co., will head a ten-man advisory committee to set final plans for the cotton industry's second cooperative research conference.

Held for the first time last year in Washington, D.C., the clinic is being convened again at the request of both industry and government representatives. It was found that the 1950 meeting, attended by more than 50 leading technologists, led to significant improvement in many cotton studies and brought out valuable new ideas for application of certain research findings.

Dr. Leonard Smith, director of utilization research for the cotton council, in announcing the second meeting said: "The clinic's two principal functions are to obtain top-level guidance for the cotton industry's public and private research programs, and to have the findings of current studies presented to industry where they can be applied. The enthusiastic support by participating research leaders from industry, government, and private and institutional laboratories demonstrates the effectiveness of the clinic-type conference, featuring frank, off-the-record discussions of each subject considered. Reports from all of those who have studied the results of the 1950 meeting reveal the usefulness of the discussions in informing the whole textile industry of the latest developments in cotton research."

The council's report of the 1950 Cotton Research Clinic, printed in abstracted form, has been widely distributed to textile mills, research institutions and others concerned with expanding the utilization of cotton through research. The report brings together the full meaning of the clinic findings and highlights the various viewpoints expressed during the sessions. Running 75 pages in length, the report also carries a detailed appendix cataloging all active cotton research studies.

The 1951 clinic is being held in the South at the specific request of mill representatives and with the approval of other participating groups. Although the plans still call for keeping attendance limited so that the maximum possible technical value may be achieved, facilities at Pinehurst are expected to permit a somewhat larger attendance at the 1951

meeting. Problems created by the nation's mobilization effort will stand high on the clinic agenda with essential long-term research and applied research projects being given special attention.

The clinic advisory committee, in addition to Mr. Heard, includes the following: Dr. Hugh Brown, dean of textiles, Clemson College; J. B. Goldberg, director of research, J. P. Stevens Co.; Dr. Milton Harris, president, Harris Research Laboratories; V. B. Holland, director of research, Cannon Mills; Walter Regnery, president, Joanna Cotton Mills Co.; Dr. Walter M. Scott, assistant chief, Bureau of Agricultural and Industrial Chemistry, U.S.D.A.; Dr. R. Y. Winters, assistant Administrator, Agricultural Research Administration, U.S.D.A.; and Dr. Smith and George Buck of the National Cotton Council.

Staple Fiber Production Begins In Mexico

The production of acetate staple fiber has begun at the Celanese Mexicana plant in Ocotlan, Jalisco, Mexico, it is announced by Harold Blanke, president of Celanese Mexicana, S. A. The production rate for the first year may reach 5½ million pounds, he announced. Mr. Blanke stated that together with its initial production of acetate staple fiber, Celanese Mexicana, S. A. is increasing its facilities for additional production of acetate filament yarn. Celanese Mexicana, S. A., he said, is making yarn of a quality comparable to the best synthetic fibers produced in the world.

S.T.A. Governors Make Convention Plans

Sixteen members of the board of governors of the Southern Textile Association met at the Charlotte (N. C.) City Club Jan. 13 to discuss plans for this year's annual convention, which is scheduled June 21-22-23 at Mayview Manor, Blowing Rock, N. C. The convention, details of which will be announced when completed, will follow its usual schedule of buffet supper Thursday, business session, recreation and banquet on Friday, and final meeting Saturday morning. Information as to the four divisional meetings this Spring also will be announced later by the respective chairmen.

Officers of the S.T.A. include A. R. Marley of Erwin Mills, Inc., Erwin, N. C., president; J. L. Delany of Joanna (S. C.) Cotton Mills, vice-president; D. A. Purcell of Fieldcrest Mills, Draper, N. C., board chairman; and Smith Crow of Erlanger Mills, Lexington, N. C., executive secretary and immediate past president. Division leaders are: South Carolina—J. C. Godfrey of Calhoun Mills, Calhoun Falls; Eastern Carolina—J. R. Meikle of Rosemary Mfg. Co., Roanoke Rapids; Northern North Carolina-Virginia—G. R. Ward of Highland Cotton Mills, High Point; Piedmont—Marshall Rhyne of Chronicle Mills, Belmont; and Associate Members—John M. Reed of Ashworth Bros., Charlotte, N. C.

Decline In October Cotton Cloth Exports

United States exports of cotton cloth in October, 1950, totaled 50,162,000 square yards, a decline of 797,000 yards from September exports and 10,221,000 yards under the October, 1949, total, the Department of Commerce reported Dec. 27.

Total exports for ten months, January through October, aggregated 457,126,000 square yards, compared with 771,476,000 square yards for the corresponding ten months of

1949, a decrease of 314,350,000 yards, or 41 per cent. For the ten months of 1950, the following reductions from the 1949 figures were registered: Iran, 89,589,000 yards; Phillippine Republic, 55,375,000 yards; Union of South Africa, 38,775,000 yards; Canada, 26,441,000 yards; and Belgian Congo, 11,601,000 yards. Declines were also shown for Venezuela, Thailand, Morocco, Honduras and a few other countries. These declines were offset to some extent by increases for Indonesia which rose by 25,650,000 yards over the exports for the first ten months of 1949, Cuba which increased by 21,023,000 yards, Haiti up 6,105,000 yards, Dominican Republic up 5,093,000, and Nicaragua up 2,978,000 yards. Smaller increases were shown for a number of other countries.

Fabric Producers Expected To Hold Prices

Cotton and wool fabric manufacturers are expected to hold prices voluntarily at the Dec. 1, 1950, level, unless increases are justified, it was explained early this month by Michael V. DiSalle, price stabilizer for the Economic Stabilization Administration, in a second clarification of the "honor system" for price controls. Mr. DiSalle explained that the standards did apply to "processors and distributors of agricultural commodities and to distributors of commodities produced from agricultural commodities.

The Defense Production Act of 1950 prohibits E.S.A. from fixing price ceilings on products manufactured from agricultural commodities at a point less than parity plus fair and equitable margins for processing. Since both cotton and wool growers' prices are well above parity at present, Mr. DiSalle evidently was sure his clarification would cover these commodities, even though they were not specifically mentioned in his latest explanation of the standards.

His clarification noted that the "honor system" price standards provided necessary flexibility in pricing of products processed from agricultural commodities and also recognized that some agricultural prices were below parity and other legal minimums set by D.P.A. With cotton and wool growers' prices above parity now, the standards can cover these commodities without fear of running counter to D.P.A.

Thus, as with all other business and industry covered by the standards, cotton and wool fabric manufacturers will be expected to hold the line and not increase prices beyond the Dec. 1 level, except under specific conditions.

Association Pledges Heavy Supply Of Yarn

Combed yarn industry leaders Jan. 8 assured Army procurement officers that the industry will make very effort to supply the nation's civilian and defense needs in the present emergency. This pledge was made at a meeting in Char-

lotte, N. C., between the Southern Combed Yarn Spinners Association membership and representatives of the Quartermaster Corps. Purpose of the meeting was to provide a full exchange of information regarding the combed yarn spinning industry's capacity and the possible military needs for these yarns.

About 110 top executives in the industry attended the meeting which was presided over by George W. Boys of Green River Mills, Inc., Tuxedo, N. C., president of the association. Col. Hugh McIntosh of the Quartermaster General's office in Washington, Col. J. B. Colson of the New York Quartermaster Procurement office, and Col. J. Pospisil of Atlanta, Ga., led the group of industrial mobilization officers present for the meeting.

Latest Rayon Output Supply Figures

The capacity of the United States rayon producing industry in mid-November, 1950, totaled 1,306,000,000 pounds on an annual basis, according to a recently completed survey of the Textile Economics Bureau, Inc. Details of the survey as published in the January issue of *Rayon Organon,* the bureau's statistical bulletin, reveal that productive capacity of American producers has increased approximately nine per cent since the end of 1949. On the basis of November, 1950, production, the *Organon* estimates that in that month the industry operated at 98 per cent of its capacity.

By the middle of 1951, the rayon industry's capacity in this country is expected to increase to 1,383,000,000 pounds and by October, 1952, a further increase to 1,520,000,000 pounds is anticipated. The capacity data cited in the *Organon* include rayon produced by the viscose, cuprammonium, and acetate processes, and for all types of primary products (filament yarn, staple, tow, horsehair and straw), but do not include "capacity" for rayon waste nor for other synthetic textile fibers.

Part of the increased capacity stems from completion of machine-rebuilding programs of several producers since the Summer of 1949. The major portion, however, is the result of a larger number of spinning nozzles becoming active either due to new installations or to the activation of nozzles which were idle due to lack of spinning solution, major machine repair, and similar causes. The *Organon* points out that the capacity is not an actual production survey or forecast. Most rayon producers are still plagued by raw material shortages of one kind or another and are working on a relatively narrow margin in the delivery of raw materials, while in some cases machines are shut down due to lack of raw materials.

In mid-November, 1950, the viscose high tenacity capacity of domestic producers was 326,000,000 pounds on an

annual basis and the actual average denier spun was 1,597. It is expected that by July the capacity of viscose high-tenacity yarns will increase to 345,000,000 pounds, an increase of six per cent and the average denier will be 1,602. The November, 1950, capacity of intermediate plus regular tenacity or textile viscose+cupra yarn was 336,000,000 pounds. A modest increase of two per cent is expected, bringing capacity to 342,000,000 pounds by the middle of this year. The November figure represents capacity at an average of 130-denier actually spun, while the projected July capacity denier is 131.

Acetate yarn capacity in November was 336,000,000 pounds at 102 average denier. The forecast for July is for a seven per cent increase or 360,000,000 pounds at 104-denier. Combining the viscose+cupra textile and the acetate yarn, a total textile rayon yarn capacity of 672,000,000 pounds (average denier 115) was shown in November. By mid-July the total for all textile rayon yarns is expected to be 702,000,000 pounds at 116-denier.

Current capacity of viscose staple and tow is 192,000,000 pounds on an annual basis. A five per cent increase is anticipated by July for a total of 202,000,000 pounds. Acetate staple capacity now at 116,000,000 pounds is expected to increase to 134,000,000 pounds by July, an increase of 15½ per cent.

Estimating the increase in capacity from November, 1950, to October, 1952, the *Organon* states that it can be expected that viscose high-tenacity will rise from 326,000,000 pounds to 350,000,000 pounds, or seven per cent; textile yarn from 672,000,000 pounds to 720,000,000 pounds or seven per cent; total staple from 308,000,000 pounds to 450,000,000 pounds or by 46 per cent; and the grand total of rayon from 1,306,000,000 pounds to 1,520,000,000 pounds, or an increase of 16 per cent.

Surveying world rayon production during 1950, the *Organon* estimates that, based on reports from six to 11 months' operation during the year, the total global output was approximately 3,500,000,000 pounds, an all-time high level. The 1950 estimate represents an increase of 29 per cent over the previous year. Rayon filament yarn produced throughout the world last year is estimated at 1,900,000,000 pounds, an increase of 16 per cent. Total world output of rayon staple last year is estimated to have been 1,600,000,000 pounds, an astounding increase of 50 per cent compared to 1949. Staple output, however, was only 50,000,000 pounds more than the previous peak year of 1941 when 1,550,000,000 pounds were produced.

In listing the notable achievements of rayon during 1950, the *Organon* notes that there was a larger consumption of the product in the older markets and in standard products ranging from women's apparel of all types to household goods and on to tire fabrics and other industrial uses. In the men's apparel field, the year witnessed a notable increase in the use of rayon in Summer-weight clothing and the use of rayon and other man-made fibers in men's Winter-weight clothing, especially in blends with wool. Noteworthy also was the rapidly growing use of rayon in the production of carpets and rugs, both as 100 per cent rayon and as rayon-wool blends, and the use of rayon as a bagging material. The military demand for rayon and other synthetic fibers will become an important part of the defense program in military products such as tires, self-sealing fuel cells, human and cargo parachute canopies and cords, and uniform linings.

SOUTHERN SOURCES OF SUPPLY for Equipment, Parts, Material, Service

Following are the addresses of Southern plants, warehouses, offices, and representatives of manufacturers of textile equipment and supplies who advertise regularly in TEXTILE BULLETIN. We realize that operating executives are frequently in urgent need of information, service, equipment, parts and materials, and believe this guide will prove of real value to our subscribers.

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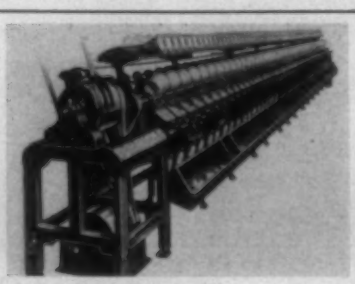

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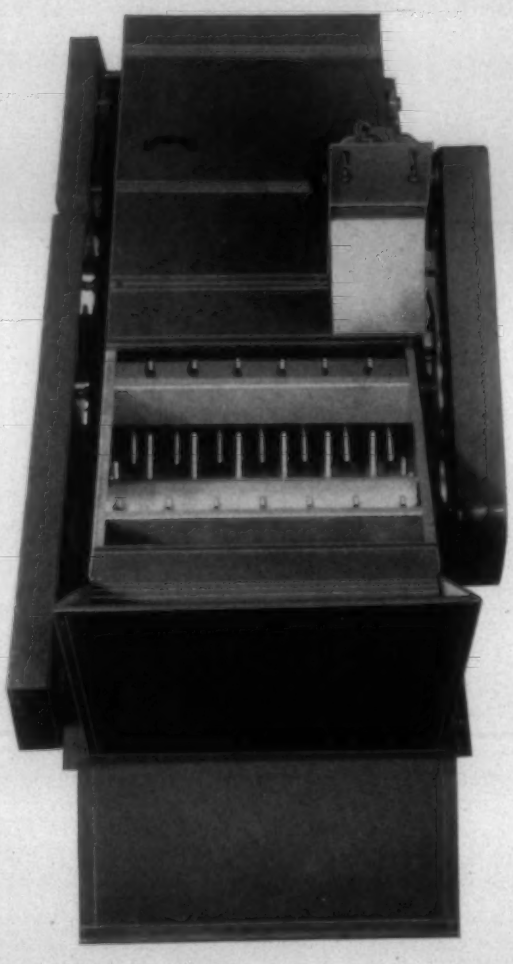

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Steel constructed . . . ball bearing . . . each bearing enclosed in a special dirt and dust proof housing . . . pulleys completely covered . . . parts easily accessible . . . flexible grid bars reduce fire hazard and are adjustable . . . ALL PARTS DYNAMICALLY AND STATICALLY BALANCED BY THE BEAR DYNAMIC METHODS . . . air-free . . . built-in sprayer canopy confines extinguisher spray to fire area.

The "SUPER CLEANER" does an excellent blooming as well as cleaning job, and may be used singly or in tandem up to six machines.

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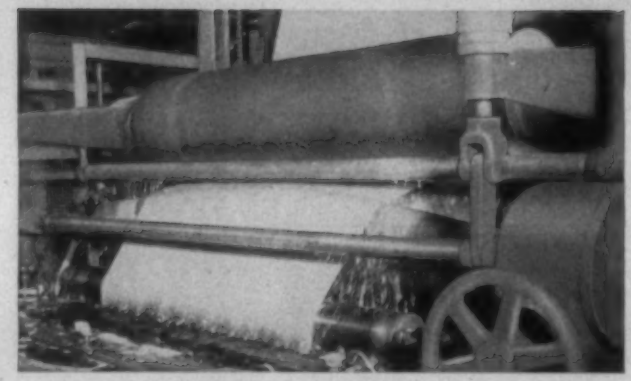

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– TEXTILE INDUSTRY HAPPENINGS AS THE MONTH ENDED –

PERSONAL NEWS

D. R. LaFar, Jr., of Gastonia, N. C., head of the LaFar chain of textile plants located in the Carolinas, was honored Jan. 15 when he was presented the Silver Beaver Award, one of Scoutdom's highest honors. Mr. LaFar is president of the Piedmont Council, Boy Scouts of America. The awards are made to adult leaders who have contributed outstanding service to Scouting on a council and district level.

Karl B. Nixon, *left*, has been elected president of Newnan (Ga.) Cotton Mills, succeeding Wyllys H. Taylor, who resigned several months ago and is now serving the government as a member of the National Production Authority. Mr. Nixon has been with the firm for 23 years and was serving as general manager when elevated to the presidency. With Mr. Taylor, he developed the Newnan System of spinning worsted on cotton frames, a system now widely used by mills throughout the country. . . . Madison F. Cole, formerly superintendent of Mill No. 2, has been named general superintendent of Newnan mills. He is a graduate of Georgia Tech and has been with Newnan since 1940, except for about 4½ years in the service. . . . Joseph H. Foster has been promoted to superintendent of Mill No. 2, succeeding Mr. Cole. Mr. Foster is a 1940 graduate of Georgia Tech, and like Mr. Cole, has been connected with Newnan Cotton Mills since, except for time in the service during the war. . . . Harry F. Taylor, superintendent of Mill No. 1 since 1939, continues in that capacity.

Clarence G. Higginbotham, assistant treasurer of the HDV Division of Callaway Mills, LaGrange, Ga., Jan. 1 was sworn in as a member of the LaGrange city council.

Charles H. A. Schmitt of Sandoz Chemical Works, E. A. Leonard of Alexander Smith & Sons Carpet Co., Paul Choquette of General Dyestuff Corp., Henry E. Millson of the Calco Chemical Division of American Cyanamid Co., Francis S. Richardson of Waldrich Co., Delawanna, N. J., Weldon G. Helmus of Fair Lawn (N. J.) Finishing Co. and P. J. Wood of Royce Chemical Co. have been appointed members of a committee to arrange the technical program for the 30th national convention of the American Association of Textile Chemists & Colorists to be held Oct. 17-19. The committee is headed by William A. Holst of the National Aniline Division of Allied Chemical & Dye Corp.

Robert R. West, a former president of Dan River Mills, Danville, Va., recently was appointed consultant to Secretary of State Dean Acheson. Mr. West now makes his home at Warner, N. H. Mr. West also has been associated with Esmond Mills, Inc., of New York and Wilkes-Barre (Pa.) Lace Mfg. Co.

Charles F. Goodman, president of American Finishing Co., Memphis, Tenn., has been made a director of the National Bank of Commerce in Memphis.

Russell Newton, Jr., has joined Dan River Mills, Danville, Va., as a sales trainee and has been assigned to the fabric research and development department.

Harry Clark, employment and training overseer at Judson Mills, Greenville, S. C., Jan. 15 reported for active duty with the Second Marine Division at Camp LeJuene, N. C. Mr. Clark, who was captain of the 1947 Wake Forest football team, joined Judson in 1948 as athletic director.

Leon Lowenstein, chairman of the board of M. Lowenstein & Sons, Inc., has been named general chairman of the Joint Defense Appeal drive in Greater New York, which begins Feb. 1.

R. Donald Harvey, general manager of the Lindale (Ga.) Division of Pepperell Mfg. Co., has been elected to the board of directors of the National City Bank of Rome, Ga.

George A. Sheldon of Caryville, Mass., is now superintendent of woolen carding and spinning at the new Greenville (N. C.) Mills. . . . Howard Hogan, formerly of Amherst, Mass., has been named superintendent of dyeing at Greenville Mills.

Frank S. Grieve, formerly yarn superintendent for Assabet Mills, Maynard, Mass., recently became associated with Virginia Woolen Co., Winchester, Va.

James T. Phillips, chairman of the board of Buck Creek Cotton Mills, Siluria, Ala., recently was named chairman of the Alabama State Senate's insurance committee. A newcomer to the Alabama State Senate, Mr. Phillips was elected in 1950.

Frank Byrd, who has just returned from Germany where he was under contract to assist in the rebuilding and modernization of textile plants there, has returned to the United States to assume the superintendency of Caledonia Mills, Inc., Lumberton, N. C.

H. L. Garrison, shop overseer at Jefferson (Ga.) Mills, was honored recently at a dinner party given by city officials upon his completion of four years' service as a city councilman. Due to the stress of his plant duties, Mr. Garrison did not offer for re-election to the council.

Edward N. Raleigh has resigned from the credit department of Textile Banking Co., Inc., New York City, to join Sanders Industries of Mississippi, Jackson, Miss., as administrative assistant to R. D. Sanders, president.

Charles A. Cannon, president of Cannon Mills Co., Kannapolis, N. C., has been reported as having consented to act as chairman of the Textile Mills Information Committee to succeed the late G. Ellsworth Huggins. Mr. Huggins was president of Catlin-Farish Co., Martel Mills Corp. and Henrietta Mills, Inc.

Clarence E. Elsas, formerly vice-president of Fulton Bag & Cotton Mills, Atlanta, Ga., has been elected president of the firm to succeed the late William Elsas, who died Dec. 9 of a heart attack. Three new members elected to the board of directors are Norman D. Cann, attorney of Washington, D. C.; Monroe Hornsby, manager of Fulton's New York office; and Frederic C. Barnet of Dallas, Tex., who has been with the firm 11 years in the canvas manufacturing department. Norman E. Elsas, chairman of the board, served as president of the firm in the interim between the death of William Elsas and the election of the new president Jan. 14.

R. D. Hardeman, assistant manager of the Riegel Textile Co. plant at Trion, Ga., has been elected treasurer of the Chattooga County District Committee, Boy Scouts of America. . . . C. B. Bricker, assistant purchasing agent, has been elected to the Trion city council.

OBITUARIES

Brig.-Gen. Andrew D. Hopping, 57, chief of the supply division of the Office of the Quartermaster General, died suddenly Jan. 11 in Washington, D. C. General Hopping had been chief of the supply division since July, 1949. Surviving are his wife, one son and four daughters.

Robert McD. Reid, 49, formerly associated with Burlington Mills Corp., Glencoe Mills and Carter Fabrics, died recently. Interment was made in Gastonia, N. C. Surviving are his mother, a sister and a brother.

Samuel D. Riddle, 89, died Jan. 8 at his home in Glen Riddle, Pa. A widely known turfman, Mr. Riddle was president of the former Riddle Co., commission cotton yarn house. He formed the corporation in 1916, after an association with Glen Riddle Mills and the Muller-Riddle Co. The firm went out of business about 25 years ago.

MILL NEWS

PROVIDENCE, R. I.—Controlling interest in the Aspinook Corp. has been purchased from the estate of Bernard R. Armour by a syndicate headed by M. N. and H. J. Sobiloff. It is reported that no change is contem-

plated in the present management of the firm which operates finishing, printing and dyeing plants in Rhode Island, Connecticut, Massachusetts and Union Bleachery, Greenville, S. C.

KERSHAW, S. C.—Construction is under way on an addition to the Kershaw Plant of Springs Cotton Mills which will house 6,000 spindles and 100 looms of additional equipment.

HIGH SHOALS, N. C.—Carolinian Mills, Inc., is planning construction of a two-story weaving and sewing building of about 52,380 square feet of floor area. Plans prepared by the McPherson Co., engineer and architect, Greenville, S. C., reveal that the structure would be of brick and steel construction, measuring 135 by 194 feet.

TAYLORSVILLE, N. C.—Work on a 30,000 square-foot addition to Schneider Mills, Inc., is scheduled to begin soon. The building, of brick with foam-glass insulation, is expected to be completed by July 1 and will provide space for 120 more looms, new quilling and yarn conditioning rooms. A humidifying system will be installed by Bahnson Co., Winston-Salem, N. C., including central station refrigerating equipment in the quilling room. The general construction contract, about $120,000, was awarded to Barger Construction Co., Mooresville, N. C., and sprinkler system contract, $16,686, to Automatic Sprinkler Corp. of America, Charlotte, N. C. Biberstein & Bowles, Inc., Charlotte, is architect-engineer for the project.

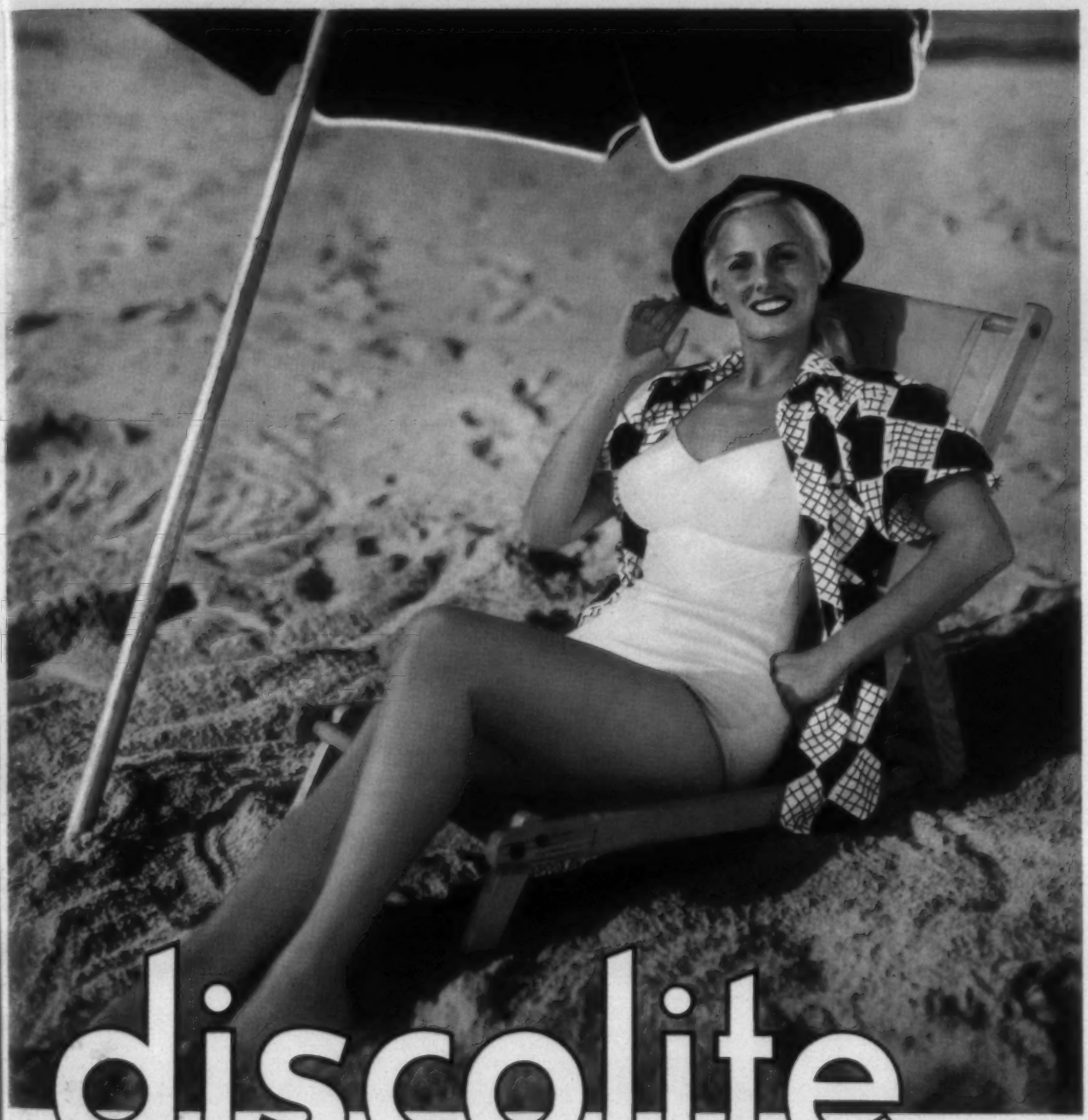
CANTON, GA.—Under a ruling of the U. S. Court of Claims on Jan. 9, Canton Mills will recover some of the Federal income taxes it paid in 1936. The court ruled that the commissioner of internal revenue "improperly disallowed deductions" of $41,300 and that Canton Mills "is entitled to recover the resulting overpayment of taxes with interest."

ENKA, N. C.—The $8,000,000 expansion program started last March at American Enka Corp. has been considerably enlarged because of international developments during the past few months, the company reports. The original expansion program was designed to increase the potential output of the Enka and Lowlands, Tenn., plants by about ten million pounds of rayon annually.

STATESVILLE, N. C.—Construction was started recently on another new addition to Plant No. 7 here of Mooresville (N. C.) Mills. The new addition will be about 50 by 75 feet and will house another picker machine. The other addition, completed recently, now houses combers and made available space for 21 more cards, which are now being installed.

GREENSBORO, N. C.—Cone Mills Corp. has announced plans for spending from $350,000 to $400,000 on improving the 1,460-acre area around its plants in Greensboro. The community renovation program calls for modernization of about 91 company-owned houses. The firm has spent approximately $2,000,000 renovating company houses since 1949.

Index to Advertising



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